

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

ANALYSIS OF THE FINANCIAL ACCOUNTING SITES ON THE WORLD WIDE WEB

by

Boris Lyobomirov Bachvarov

June 2002

Principal Advisor:
Associate Advisor:

Doug Moses
Tony Kendal

Approved for public release; distribution is unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE June 2002	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE: Title (Mix case letters) Analysis of the financial accounting web sites on the World Wide Web			5. FUNDING NUMBERS	
6. AUTHOR(S) Boris Lyobomirov Bachvarov				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release, distribution is unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (maximum 200 words) During the last several years the Internet has rapidly evolved. There is a tremendous increase in the amount of information available on the Internet. A growing number of organizations are using the Web to publish financial reports and provide other financial accounting and reporting information. One of the biggest challenges is to find information suitable for specific needs. The objective of this thesis is to analyze information available on the Internet and to determine its suitability for supporting instruction in financial reporting and analysis. This thesis examines more than 200 web sites. They are categorized and evaluated using the criteria of accuracy and reliability, accessibility/cost and currency. The evaluated web sites are included in a web page. This thesis provides the faculty and the students as well as other users of financial accounting data with a gateway via which they can access the best financial accounting, reporting and analysis data available for free on the Internet.				
14. SUBJECT TERMS Financial accounting; Internet			15. NUMBER OF PAGES 95	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL	

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

**ANALYSIS OF THE FINANCIAL ACCOUNTING SITES ON THE WORLD
WIDE WEB**

Boris Lyobomirov Bachvarov
Bulgarian Department of Defense
B.S., University for National and World Economics, 1996

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGMENT

from the

**NAVAL POSTGRADAUTE SCHOOL
June 2002**

Author: Boris Lyobomirov Bachvarov

Approved by: Doug Moses
Thesis Advisor

Tony Kendal
Associate Advisor

Douglas A. Brook
Dean, Graduate School of Business and Public Policy

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

During the last several years the Internet has rapidly evolved. There is a tremendous increase in the amount of information available on the Internet. A growing number of organizations are using the Web to publish financial reports and provide other financial accounting and reporting information. One of the biggest challenges is to find information suitable for specific needs. The objective of this thesis is to analyze information available on the Internet and to determine its suitability for supporting instruction in financial reporting and analysis. This thesis examines more than 200 web sites. They are categorized and evaluated using the criteria of accuracy and reliability, accessibility/cost and currency. The evaluated web sites are included in a web page. This thesis provides the faculty and the students as well as other users of financial accounting data with a gateway via which they can access the best financial accounting, reporting and analysis data available for free on the Internet.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	PURPOSE	1
B.	DISCUSSION	1
C.	RESEARCH QUESTIONS	1
1.	Primary question	1
2.	Subsidiary questions	2
D.	SCOPE, LIMITATIONS AND ASSUMPTIONS	2
E.	METHODOLOGY.....	2
F.	ORGANIZATION.....	3
G.	BENEFITS OF THE STUDY.....	4
II.	OVERVIEW OF THE FINANCIAL ACCOUNTING, FINANCIAL REPORTING AND FINANCIAL ANALYSIS INFORMATION AVAILABLE ON THE INTERNET.....	5
A.	PURPOSE	5
B.	THE INTERNET AND THE WORLD WIDE WEB	5
C.	SEARCH ENGINES AND SEARCH SOFTWARE.....	9
D.	SEARCH METHODOLOGY	12
E.	CATEGORIZATION AND SCOPE OF THE WEB SITES.....	15
III.	CRITERIA FOR ASSESSMENT OF THE WEB SITES CONTAINING FINANCIAL AND ACCOUNTING INFORMATION.....	45
A.	INTRODUCTION.....	45
B.	CRITERIA FOR ASSESSMENT OF THE WEB SITES	45
C.	ASSESSING THE FINANCIAL REPORTING WEB SITES.....	51
IV.	ANALYSIS AND RANKING OF THE WEB SITES CONTAINING FINANCIAL AND ACCOUNTING INFORMATION.....	59
A.	INTRODUCTION.....	59
B.	EVALUATION OF THE EDUCATIONAL RESOURCES FOUND ON THE WEB	60
1.	General Accounting.....	60
2.	Financial Statements	61
3.	Analysis of financial statements and other data.....	62
4.	Accounting policies, processes and issues	63
5.	Government accounting.....	64
C.	EVALUATION OF GENERAL INFORMATION, NEWS, FINANCIAL STATEMENTS, EARNINGS ESTIMATES AND ANALYST REPORTS ETC.....	64
1.	Mostly Free	64
2.	Mostly fee based	67
D.	EVALUATION OF CALCULATORS AND TOOLS	68
E.	EVALUATION OF GLOSSARIES.....	69

F.	EVALUATION OF PROFESSIONAL ORGANIZATIONS.....	69
G.	EVALUATION OF MISCELLANEOUS.....	70
H.	EVALUATION OF GATEWAYS.....	71
V.	THE WEB SITE BUILDING PROCESS	73
A.	INTRODUCTION.....	73
B.	FACTORS CONSIDERED IN THE PROCESS OF THE BUILDING OF THE WEB PAGE	73
C.	LAYOUT.....	74
D.	DESIGN.....	74
E.	ADDING TEXT TO THE WEB PAGE	74
F.	ADDING TABLES TO THE WEB PAGE	75
G.	INSERTING IMAGES	75
H.	CREATING LINKS.....	75
I.	CHANGING THE BACKGROUND.....	75
VI.	CONCLUSIONS AND RECOMMENDATIONS	77
A.	INTRODUCTION.....	77
B.	METHODOLOGY.....	77
C.	SCOPE AND CATEGORIZATION	78
D.	EVALUATION.....	79
E.	WEB PAGE	80
F.	CONCLUSIONS	81
G.	RECOMMENDATIONS FOR FUTURE RESEARCH.....	81
	INITIAL DISTRIBUTION LIST	83

LIST OF TABLES

Table 1.	Search engines ratings	10
Table 2.	Scores and characteristics of the quality criteria	56
Table 3.	Weights of the quality evaluation criteria 3	56
Table 4.	Calculating the overall quality rating	57
Table 5.	Scores and characteristics of the relevance criteria.....	58
Table 6.	Quality and relevance ratings of the general accounting web sites.....	60
Table 7.	Quality and relevance ratings of the financial statements web sites	61
Table 8.	Quality and relevance ratings of the analysis of financial statements and other data	62
Table 9.	Quality and relevance ratings of the accounting policies processes and issues web sites.....	63
Table 10.	Quality and relevance ratings of the government accounting web sites	64
Table 11.	Quality and relevance ratings of the mostly free corporate web sites.....	66
Table 12.	Quality and relevance ratings of the mostly fee based corporate web sites....	67
Table 13.	Quality and relevance ratings of the calculators and tools web sites	68
Table 14.	Quality and relevance ratings of the glossaries web sites	69
Table 15.	Quality and relevance ratings of the professional organizations web sites.....	70
Table 16.	Quality and relevance ratings of the miscellaneous web sites	71
Table 17.	Quality and relevance ratings of the gateways.....	72

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

A. PURPOSE

The purpose of this thesis is to research the financial reporting resources available on the Internet. The objective is to identify, categorize and evaluate the web sites related to financial accounting, reporting and analysis and to build a web page that contains links to the most useful of the sites that have been researched.

B. DISCUSSION

During the last several years the Internet has rapidly evolved. A major role in this process was played by the development of the World Wide Web. This technology has tremendously increased the amount of information available on the Internet. Moreover it has made sharing and accessing data easy and user friendly. An increasing number of organizations are using the Web to publish financial reports and other financial accounting data. The faculty and the students at the NPS are potential consumers of this information.

One of the biggest challenges is that there is too much financial information on the Internet. So far there have been no efforts to examine, categorize and evaluate the enormous amount of financial data available on the web in terms of its specific value in supporting education in the area of financial reporting and analysis. The data varies in terms of formats, quality, reliability, timeliness, accessibility and so on. The potential researchers in the financial field often spent a lot of time when attempting to find specific information suitable for their needs. The task is further complicated by the existence of numerous search engines that usually produce thousands of web sites and pages.

Therefore the potential consumers of financial accounting information need a web site that gathers data that is useful to the potential users.

C. RESEARCH QUESTIONS

1. Primary question

What is the nature and scope of the financial accounting information available on the Internet?

2. Subsidiary questions

- a. What categories of web sites, web pages, newsgroups and other resources regarding financial accounting are available on the Internet?*
- b. How relevant is the data found in the Internet to financial accounting and reporting instruction?*
- c. How accurate and reliable are the web sites found in the Internet?*
- d. Is the data accessible and free of charge?*
- e. How current are the web sites?*
- f. How can the researched web sites be included in a web page*

D. SCOPE, LIMITATIONS AND ASSUMPTIONS

The scope will include a review of the financial web sites available on the Internet. The research will be limited to a sample of web sites concerning financial statements, financial reporting and financial analysis. The data resources found on the Internet will be analyzed and evaluated. The scope will also include building a web site with links to the most useful financial accounting resources. Finally the thesis will make conclusions and recommendations based on the findings during the research process

E. METHODOLOGY

The methodology used in this thesis will consist of the following steps:

1. Use different search engines and specialized search software (like Copernic 2001 pro) to identify web resources containing financial accounting data.
2. Categorize the web sites
3. Define criteria for assessment of the web resources. The criteria will include:
 - a. Quality Criteria
 - i. Accuracy and Reliability

- ii. Accessibility/Cost
 - iii. Currency
- b. Institutional criteria
 - i. Relevance to financial reporting courses (MN 2150; MN 3156; MN 2155; MN 4159; GB 3050; GB 4550) objectives and topics
- 4. Assign a quality scores to each site.
- 5. Assign weights to the quality criteria and calculate an overall quality rating.
- 6. Assign relevance scores to each of the web sites.
- 7. Evaluate and rank the web sites based on their quality and relevance ratings.
- 8. Build a web page with links to the researched web sites.

F. ORGANIZATION

Chapter I is an introductory chapter.

Chapter II includes the following:

- An overview of the Internet and the World Wide Web
- Overview of the search engines and search software;
- The search methodology and the search process
- Findings resulting from the search and categorization of the web sites.

Chapter III describes the criteria that will be used for categorization assessment and valuation of the web sites. This establishes the framework for the analysis in the subsequent chapter.

Chapter IV focuses on the analysis of the web sources based on the criteria established in chapter III. This chapter also acquaints the reader with how the examined web sites are ranked and which sites are selected for the web page.

Chapter V is a description of the web page building process

Chapter VI provides conclusions and recommendations.

G. BENEFITS OF THE STUDY

This thesis will provide the faculty and the students at the Naval Postgraduate School as well as all the other users of financial accounting data with a gateway via which they can access the best financial accounting, reporting and analysis data available for free on the Internet. All those that perform web-based research in the field of finance can use this thesis as a good starting point. It will save them a lot of effort and time.

II. OVERVIEW OF THE FINANCIAL ACCOUNTING, FINANCIAL REPORTING AND FINANCIAL ANALYSIS INFORMATION AVAILABLE ON THE INTERNET

A. PURPOSE

The purpose of this chapter is to provide an overview of the financial information available on the Internet. It discusses the Internet and WWW and explains why they are a valuable source of data. Then the chapter presents an overview of the tools needed to search for data on the World Wide Web. The chapter identifies the scope and type of financial information found on the Internet and categorizes it.

B. THE INTERNET AND THE WORLD WIDE WEB

The Internet has drastically changed our lives – from our working environment to our leisure time. What exactly is the Internet? Many definitions can be given. But all of them agree that it is a super network of networks. It consists of millions of networks, linking:

- Tens of millions of computers
- Peripherals such as printers and large hard disk assemblies.
- Communications equipment, including wiring, satellites, routers, repeaters, switches.

The computer networks are means (copper wiring, optical-fiber wiring, infra-red light, microwaves, etc.) of linking computers so that they can communicate with each other.

There are different types of networks:

- "Backbone" networks - powerful, high capacity ("high bandwidth) networks that link:
 - Regional networks (also relatively high bandwidth) that link:
 - Metropolitan (or local wide-area networks) networks, which link:
 - Direct connections to the Internet. These may be:
 - Organizational (mostly corporate) LANs (local area networks) or Intranets (Web-based LANs).

- Organizational WANs (wide area networks) or Extranets (Web-based WANs).
- Internet Service Providers (ISPs).
- Other Organizations.
- Individual or personal (household) LANs, also called "family area LANs" or FANs.

The most important feature of the Internet is its communication capability. The Internet enables individuals and organizations to communicate and access and transfer information around the world.

There are a variety of technologies, protocols, and services to support these communications capabilities, including:

- The underlying TCP/IP (Transmission Control Protocol/Internet Protocol)
- Telnet
- World Wide Web
- Electronic Mail (E-mail)
- File Transfer Protocol (FTP)
- Gopher (Hyperlinked, Menu-driven information service)

The Internet as we know it today was made possible by the creation of the World Wide Web (WWW or Web). It is defined by two characteristics:

- It is a "hyperlinked" communications service that builds on the Internet's TCP/IP communications technology.
- It is composed of millions of hyperlinked, graphical Web pages that may host a wide range of text, image, audio, and video media.

"Hyperlinks" are a way of actively linking text or graphical documents or other kinds of files that contain active communications links ("hyperlinks") to other documents or files (usually Web pages) on other computers (usually called Web "hosts" or "servers") across the Internet.

"Hypertext" documents (usually Web pages) on the WWW are files that contain active hyperlinks to other documents or files, which, in turn, may contain links to other documents, etc.

Clicking on a link, which may be text (usually blue and underlined) or an image, takes the user to another document. Specifically, it causes a request to be sent to the computer hosting the other documents or Web pages. The request asks for the Web page and related files (such as images on the Web page) to be sent. The browser on the local computer then displays the Web page.

The "Hypertext Transfer Protocol" (http) is the communications protocol that makes all this possible.

Http runs on top of the Internet's TCP/IP protocol and defines how different types of hyperlinked data (text and multimedia) are transmitted and accessed. In a very broad sense the technology is analogous to the Post Office.

- Internet communications equipment and wiring is equivalent to the letter carriers and trucks and airplanes that deliver the mail.
- TCP/IP, the protocol defining the format for carrying information on the Internet, is the envelope.
- Http, the protocol defining the format for information on the Web, is the letter.
- TCP/IP also carries a wide range of other data formats (defined by other protocols, including "ftp," "telnet," "ASCII etc.)

Browsers that have sufficient sophistication to handle the various media display the millions of hyperlinked, graphical Web pages containing text, image, audio, and video media.

Graphical "hyperlinked" Web pages are created and displayed mostly through the use of the Hypertext Markup Language (HTML).

HTML is a simple way of using text characters in certain combinations ("tags") with symbols to describe how a Web page should be displayed in a Web page browser.

A browser reads those "tags" and displays the content of the Web page as required.

Some of the major trends concerning the Internet are:¹

- Web Trends
 - There are at least 320 million pages on WWW
- User Trends

¹ Source: <http://www.blueroom.com/internet/I-trends.htm>

- An estimated 62 million Americans and 100 million people worldwide are regularly using the Internet.
- The figure in 1994 was only four million.
- 10 million people in North America had made purchases on the Web.
- The amount of information passing over the Internet is doubling every 100 days.
- Frequency of Use
 - Every day 51% of the Americans use the Internet
- News Web site usage
 - 20.1 million US Internet users log on frequently to obtain news.
 - This represents 53% of 38 million US users of the Internet.
 - 82% still regularly read newspapers, 74 regularly watch TV news, 71% watch cable TV news, 57% read news-related magazines.

The Internet has many advantages:

- It is an egalitarian, universal tool for communication among individuals, groups, and organizations locally as well as around the world.
- It provides a new range of communication opportunities to the physically challenged.
- It is a very low-cost, universal electronic publishing environment that:
 - Anybody can put information on.
 - Anybody else in the world can access.
- Faster delivery and analysis of current events information than print.
- It is becoming an important commercial environment.
 - One-to-many marketing
 - Business-to-business
 - Small business opportunities
- It is becoming an important information resource that can be searched:
 - Through directories or indexes.
 - Through the use of search engines.
- It is becoming an important means for delivering courses and seminars (distance learning) to students locally and around the world.

- It is a good way of finding teaching advice, techniques, and learning modules.
- It is a good way of sharing what makes for learning success and failure.

C. SEARCH ENGINES AND SEARCH SOFTWARE

As we have seen the Web is an ocean of information and resources. The users must have the proper tools to extract what meets their requirements otherwise they can easily drown.

There are numerous search engines with advantages and disadvantages. The PC World Magazine recently conducted a study² of the search engines. In their tests, they evaluated the search sites based on five criteria: relevance, advanced features (such as the AND, NOT, and OR Boolean operators; the site's ease of use, its percentage of dead links, and the freshness of the results it returned (based on how well a site did at returning pages about a current topic). Extra points were rewarded to sites that gave a correct page within the first five links.

The findings of the study are summarized in the following table.

SERVICE	Type of Service	Relevance score	Advanced features score	Ease of use score	Dead links score	Currency score	COMMENTS
Alta Vista www.altavista.com	Engine	Fair	Good	Fair	Fair	Poor	This service performed the worst of the pure search engines. It often pointed to home pages rather than to pages that provided the answer we were looking for. Its advanced searches require knowledge of Boolean, but its "sort by" feature greatly improves relevance. ★★☆☆☆
Ask Jeeves www.ask.com	Directory	Poor	n/a	Fair	Good	Poor	This natural-language site returned too many home page links and not enough direct links to the information. It has no advanced search features. ★★☆☆☆
Dogpile www.dogpile.com	Metasearch	Good	Good	Fair	Good	Poor	Unlike other metasearch engines, Dogpile divides results by the sites it gathered them from, which makes them less useful. ★★☆☆☆
Excite www.excite.com	Directory	Fair	Good	Fair	Good	Poor	You must perform a basic search to get access to the service's advanced features. Our hard-to-find search turned up dozens of adult-site links. ★★☆☆☆
Fast www.alltheweb.com	Engine	Good	Excellent	Excellent	Excellent	Excellent	A close runner-up to Google, this engine excelled in all categories except our hard-to-find topic. It produced the best percentage of correct answers with the first result, and it returned very

² "Find Everything Faster", PC World, Volume 19(25 July 01); Number 9; Pages 109-116.

							few dead links. Its interface is simple and functional. ★★★★★
Google www.google.com	Engine	Excellent	Excellent	Excellent	Good	Excellent	Still the champ, Google produced relevant returns in every category. Its easy-to-use interface fills out the experience. ★★★★★
HotBot www.hotbot.com	Metasearch	Good	Excellent	Fair	Good	Poor	This was the best metasearch site for our business, products, and technology searches, but its results were not as relevant as those of the pure search engines. ★★★☆☆
LookSmart www.looksmart.com	Directory	Poor	n/a	Fair	Good	Poor	After recently switching to a pay-for-placement model, this site tanked on most of the tests. It works much better as a directory than as a pure search engine. Its human-compiled descriptions are useful, but it has no advanced search features. ★★☆☆☆
Lycos www.lycos.com	Directory	Good	Excellent	Fair	Excellent	Excellent	Our highest-rated directory benefits from using Fast as its search engine. This service gets the edge over Yahoo because of its better interface and advanced search features. ★★★★★
MetaCrawler www.metacrawler.com	Metasearch	Poor	Fair	Good	Excellent	Poor	This metasearch site struggled with our search terms. It works better when searching for general information. ★★☆☆☆
Northern Light www.northernlight.com	Engine	Good	Good	Fair	Good	Good	Known as a researcher's favorite, Northern Light did much better in the tests when we used its advanced features. It divides results into handy subcategory folders, but it also includes links to reports and articles that it charges you to access.
Yahoo www.yahoo.com	Directory	Excellent	Excellent	Fair	Good	Excellent	Yahoo benefits from using Google as its search engine, but its portal features distract you from getting the information you want quickly. ★★★★★

Table 1. Search engines ratings

The author of this thesis used the four highest ranked sites in this study as tools for searching the Internet. A specialized software package Copernic 2001 Pro was also used.

Copernic 2001 is an intelligent agent that carries out net-searches by simultaneously consulting the most important search engines of the Internet which are grouped under categories. The software features a search wizard, the ability to search using a question or keywords, keyword highlighting in results and Web pages, a detailed search history, automatic software updating and many useful search management functions.

The software offers some 90 categories, giving access to more than 1000 search engines.

Copernic 2001 Pro, has a powerful tracking function which automatically updates specific searches and notifies users by e-mail when new results are found. It also features automated search operations such as downloading, validating and refining, keyword spell checking, and more.

Copernic 2001 combines several features³:

- Quick search toolbar and search wizard to ease search creation
- Ability to search with a simple question or keywords
- Found documents are scored and displayed according to their relevancy
- Highlighting of keywords in results and Web pages
- Duplicate matches are automatically removed
- Invalid and unreachable document links are eliminated
- Matching documents may be downloaded for off-line browsing
- Searches may be refined from downloaded documents by using search operators (AND, OR, EXCEPT, NEAR), parentheses and quotes
- Search reports may be generated in Web page format for easy browsing, filtering and sorting of documents
- Searches may be updated, grouped into folders, etc.
- Search reports may be exported or e-mailed in various file types
- Full Internet Explorer 4.0 (or later) integration: an ergonomically designed Result Explorer window can be used to browse, filter and sort found documents easier and faster; it includes a keyword toolbar to highlight keywords in any Web page and easily trace each of them by scrolling pages; the default Internet Explorer search window can be replaced by Copernic 2001; Copernic 2001 can be launched from the Quick Launch toolbar; an online translation service may be accessed directly from Internet Explorer
- Copernic Summarizer users can use integrated commands and buttons to summarize found documents and Web pages opened with Result Explorer

³ Source: the help menu in Copernic 2001 Pro

D. SEARCH METHODOLOGY

The main search tool used in this thesis was Copernic 2001 Pro. Three searches were used:

- Web search with the following search engines:
 - AltaVista
 - AOL.com search
 - CompuServe
 - Direct hit
 - Fast search
 - Google
 - HotBot
 - LookSmart
 - Lycos
 - MSN web search
 - Netscape netcenter
 - Open Directory Project
 - Yahoo!
- Business and finance search with the following search engines:
 - Business Finance Magazine
 - CFO.com
 - CNBC.com
 - CNNfn
 - EDGAR Online
 - Fidelity Investments
 - Fortune.com
 - FT.com
 - H&RBlock
 - Hoover's Online
 - Individual Investor
 - IRS
 - money.com

- Morningstar.com
- NewsAlert
- Quicken.com
- SEDAR – Companies
- SEDAR - Mutual Funds
- The Motley Fool
- The Online Investor
- TheStandard.com
- Educational resources search with the following search engines:
 - A to Z Teacher Stuff
 - About.com - Adult/Continuing Education
 - About.com - Distance Learning
 - Back to College
 - Education Planet
 - Education World
 - FindTutorials.com
 - LessonPlanZ.com
 - SearchEdu.com

One and the same key words and phrases were used in all the searches:

- The balance sheet
- Depreciation
- The income statement
- Financial accounting web sites
- Accounting cycle
- Statement of cash flows
- Inventory valuation methods
- Current assets
- Non current assets
- Intangible assets
- Amortization
- Liabilities

- Current liabilities
- Long term liabilities
- Time value of money
- Interest rates
- Shareholder's equity
- Financial analysis
- Financial accounting tools
- Financial accounting methods and methodology
- Financial accounting processes
- Financial analysis tools
- Accounting for inventories
- Accounting for assets
- Accounting for liabilities
- Effects of accounting transaction on the financial statements
- Capital

The findings of the three searches were compared in terms of number, quality and relevance to finance and accounting. The web search produced the best results. On average seventy percent of the findings had some relevance to the purpose of this thesis. Only one percent of the findings obtained using the two specialized searches (business and finance and education resources) had relevance to finance and accounting.

The outputs from Copernic 2001 Pro were verified by executing searches with the four best search engines according to the PC World magazine – Fast; Google; Lycos and Yahoo.

The same key words and phrases were used. There was an 80% overlap between Copernic and these four search engines. In addition Copernic discovered web sites and pages that could not be found by using Fast; Google; Lycos or Yahoo.

It should be noted that on average 70% of the sites that were discovered and explored found a place in the findings presented in this thesis. The other 30% were judged to be of little use or relevance and therefore were not included.

E. CATEGORIZATION AND SCOPE OF THE WEB SITES

Diverse financial and accounting information can be found on the Internet. This brings up the issue of categorizing the web sites. Several categorization alternatives were considered:

- Group the sites by the documents in the accounting process
- Group the sites by key financial and accounting processes
- Group the sites by financial and accounting topics
- Group the sites by some general common criteria

The first three alternatives were considered unsuitable for the following reasons:

- The information was very versatile
- Many sites would have remained uncategorized
- One and the same site would have been used many times in the different categories.

Therefore the sites were categorized on the basis of some general criteria that could be used to group the web sites.

The researched sites can be categorized in 7 groups:

- Educational resources – web sites that offer theory as well as on line presentations and tutorials.
- Corporate resources – Web sites that offer corporate information.
- Calculators and Tools – Web sites that calculate different things like depreciation and amortization, interest rates, buy versus lease, cash flows and many other. Some of the sides provide templates and sample documents.
- Professional organizations and associations.
- Glossaries
- Miscellaneous – Web sites that have financial relevance but do not fit in the other categories
- Gateways – Web pages that consist of links to financial web sites

1. Educational Resources

This is a broad group of Web sites that cover different financial and accounting topics. They are divided into five subgroups:

- General accounting – this a group of web sites that include on line accounting text books; presentations; tutors; templates and exercises
- Financial statements – web sites with focus on the three basic financial statements
- Analysis of financial statements and other data – this is a group of sites that put an emphasis on analysis of the information contained in financial statements and other sources
- Accounting policies, processes and issues – web sites with focus on specific accounting issues like inventories; fixed and current assets; liabilities etc.
- Government accounting resources – web sites with focus on government accounting

a. General accounting

i. Overview of the accounting cycle

http://www.business.umt.edu/faculty/herron/courses/ACCT655_01/overview.htm

The site offers information about: Transactions, Accounting Cycle, Source Documents, Financial Statements and the Accounting Equation, Debits and Credits, Journals, Ledgers, Trial Balances, Adjusting Entries, Closing Entries, Transaction Cycles.

The site also offers trial versions of accounting software

ii. Skousen student study center

http://www.swcollege.com/acct/skousen/int/student_introduction.html

The site is a student study center designed to help the visitors make use of the numerous supplements that go along with “Skousen's *Intermediate Accounting* “ 14e. The site provides information on financial reporting; the accounting cycle; the balance sheet; the income statement; the statement of cash flows; the revenues/receivables/cash cycle; complexities of revenue recognition; cost of goods sold and inventory; estimation and noncost valuation; debt financing; equity financing; investments in noncurrent operating assets (acquisition; utilization, retirement); investment in debt and equity

securities; leases; income taxes; derivatives, contingencies, business segments, and interim reports identification and valuation; earnings per share; accounting changes and error correction; analysis of financial statements. An interactive menu allows one to choose a chapter to explore and take advantage of the lecture Review, including a PowerPoint outline, and pertinent articles detailing current event. There is also Excel exercises, Internet applications, and CPA exam questions from prior years. Finally additional tutorials can be checked out such as crossword puzzles, demo problems, and an interactive quiz that provides the correct solutions--as well as explanations. To get the solutions the answers must be submitted in advance on line.

iii. Accounting tutorial

<http://www.access.wvu.edu/class/acctutor/tableofc.htm>

The site is an online tutorial covering: an overview of the accounting system; the accounting cycle; Assets, liabilities, Shareholder's equity, understanding debits and credits, general journal entries, end of period adjusting entries, end of period closing entries, financial statements, reconciling bank statements, petty cash and bad debts. The site also offers exercises with impact on debits and credits.

iv. Biz/ED Learning materials Accounting

<http://www.bized.ac.uk/stafsup/options/accounting/>

The site offers interactive worksheets and tests, downloadable spreadsheets, ratio analysis package and a set of articles and exercises covering the preparation of sets of accounts, trial balances, trading and profit and loss accounts, balance sheets, depreciation and accounting ratios.

v. CCH Business Owner's Toolkit Small Business Tools, Resources and Advice

<http://www.toolkit.cch.com/tools/tools.asp>

The site offers:

- Model business documents. Sample letters, contracts, forms, and policies ready to customize — from a Sample Independent Contractor Agreement to a Job Application Form.

- Financial spreadsheet templates. Help for managing business finances — from balancing checkbook to creating financial statements. Just plug in the numbers.
- Official Government Forms. A selection of the forms and publications most commonly used by small business owners when filing taxes with the IRS or contracting with the federal government.

vi. Financial accounting text book,

<http://college.hmco.com/accounting/needles/fa/instr/ppt/view.htm>

A power point financial accounting text book. The slides are downloadable.

vii. Financial accounting presentation

<http://panoptic.csustan.edu/3110/>

A power point financial accounting textbook. The slides are not downloadable.

viii. Forecasting Cash Flow Planning Cash Flow, Profit, Sales, Costs, Inventory, Ratios, Finance, Receivables, Payables, Cash

<http://www.planware.org/cashflow.htm?source=goto>

Considers the different aspects of cash flow management. Also describes how to prepare financial projections using computer models. The site also offers Business plan template & guidelines (Word format) On-line financial planner (Excel format) for first-cut 5-year projections and Business financial planner for short-term projections using Excel.

b. Financial statements

i. The income statement

<http://www.mece.ualberta.ca/Courses/ENGG405/Notes/Chpt3.htm>

Provides detailed information on the income statement. Including:

- The Purpose of the Income Statement
- The Time Scale of the Income Statement
- The Form of the Income Statement

- The Components of the Income Statement
- Operating Income and the Concept of Break Even
- Other Income
- Net Income

ii. Introducing the income statement

http://edis.ifas.ufl.edu/BODY_FE008

Provides information about the income statement: Background; what is an Income Statement? What Does an Income Statement Look Like? How is an Income Statement Constructed? Also contains several tables.

iii. Financial statements presentation

<http://www.mgt.buffalo.edu/courses/mgf/301/g/Chpt2/index.htm>

An online presentation of financial statements, taxes and cash flows. The presentation source can be downloaded in a power point format.

iv. Business Basics - The Balance Sheet

<http://www.sfu.ca/~mvolker/biz/balsheet.htm>

This site describes basic balance sheet issues – the nature of the balance sheet, preparation, balance sheet items, the relationship between costs of goods sold and the balance sheet.

The site also offers a downloadable excel spreadsheet for preparation of balance sheets.

v. Introducing the Balance Sheet

http://edis.ifas.ufl.edu/BODY_FE009

An on line publication that outlines the balance sheet.

vi. The balance sheet

<http://loadledger.com/support/HTML-Java/htm/thebalancesheet.htm>

The site offers an overview of the balance sheet.

vii. The statement of cash flows

<http://ac.boisestate.edu/dmenglish/ch11cashflowstmt/>

The site offers an overview of the statement of cash flows.

viii. Financial Statements Index

<http://www.accountinginfo.com/study/fs/index.htm>

An on line publication that offers an overview of the primary financial statements. There are some good examples as well.

c. Analysis of financial statements and other data

i. AEDI Financial Analysis Tools

http://web.extension.uiuc.edu/iidea/fast_tools.htm

The site offers explanation of the Dupont analysis. There is a diagram and a comprehensive example analyzing a made up corporation. The results of the corporation are compared to the results of similar firms and conclusions are drawn. The surfers can also download an excel template that calculates all the Dupont ratios and compares the actual results with the forecasts.

ii. Analyzing company reports

<http://www.ameritrade.com/educationv2/fhtml/learning/balsheetanalysis.fhtml>

A site about analyzing company reports. The topics covered include:

- Fundamental Vs. Technical Analysis
- Reading Annual & Quarterly Reports
- Understanding Company Earnings
- Understanding Balance Sheets
- Balance Sheet Analysis
- Understanding Income Statements
- Income Statement Analysis
- Calculating Profitability Ratios
- How Analysts Present Their Findings

iii. Ratio Analysis - Financial Ratios - Industry Analysis,

<http://www.ventureline.com/mbatools.htm>

The site offers financial analysis, business valuation and business planning tools.

They also claim to perform for free a financial analysis or business valuation of a data you send to them. To use the latter service one has to go through a long registration process.

iv. University of Arizona Students of Finance

<http://www.studyfinance.com/>

A web site hosted by the University of Arizona. Offers an overview of the time value of money, valuation of corporate securities, types of business organizations, basic financial statements, funds type statements, ratio analysis, working capital management, capital budgeting, dividend policy, sustainable growth measures, valuation in Excel, time value in Excel.

d. Accounting policies, processes and issues

i. Accounting for assets,

<http://ac.ceu.edu/rvogel/busn2010/CH%20%207/animated/BUSN%202010%20-%20Chap%207/tsld001.htm>

An online presentation covering accounting for plant assets, intangible assets and related expenses.

ii. Current Liabilities and the Time Value of Money,

<http://college.hmco.com/accounting/needles/fa/instr/ppt/ch09/>

An online presentation on current liabilities and the time value of money. It consists of 73 slides covering: Management Issues Related to Accounting for Current Liabilities; The Importance of Liabilities; Recognition of Liabilities; Valuation of Liabilities; Classification of Liabilities; Disclosure of Liabilities; Common Categories of Current Liabilities; Definitely Determinable Liabilities; Types of Definitely Determinable Liabilities; (Trade) Accounts Payable; Bank Loans; Commercial Paper; Notes Payable; Accrued Liabilities; Dividends Payable; Sales and Excise Taxes Payable; Example of Sales and Excise Taxes Payable; Current Portions of Long-Term Debt; Payroll Liabilities; Unearned Revenues; Example of Unearned Revenues; Estimated Liabilities; Examples of Estimated Liabilities; Income Taxes

iii. Current liabilities

<http://inst.santafe.cc.fl.us/~scrosson/POAPPT/c12htm/CHAP12/index.htm>

An online presentation on current liabilities

iv. Long term liabilities,

<http://inst.santafe.cc.fl.us/~scrosson/POAPPT/c16htm/CHAP16/index.htm>

An online presentation on long term liabilities covering:

Management Issues Related to Issuing Long-Term Debt; Reasons for Long-Term Liabilities; Reasons and Resources for Long-Term Debt; The Decision to Issue Long-Term Debt; Disadvantages of Debt Financing; How Much Debt?; Types of Long-Term Debt; The Nature of Bonds; Bond Features; Secured or Unsecured Bonds; Term or Serial Bonds; Registered or Coupon Bonds; Accounting for Bonds Payable; Balance Sheet Disclosure of Bonds; Important Provisions of the Bond Indenture; Bonds Issued at Face Value; Bonds Issued at a Discount; Bonds Issued at a Premium; Bond Issue Costs; Using Present Value to Value a Bond; Influence of the Market Interest Rate; Amortizing a Bond Discount;

Bond Discount Issues; Calculation of Total Interest Cost; Accounting for Total Interest Cost;

Methods of Amortizing a Bond Discount; Amortizing a Bond Premium; Total Interest Cost; Calculation of Total Interest Cost; Straight-Line Method of Amortizing a Bond Premium; Effective Interest Method of Amortizing a Bond Premium; Other Bonds Payable Issues;

Sale of Bonds between Interest Dates; Accounting for Sale of Bonds between Interest Dates; Accounting for Year-End Accrual for Bond Interest Expense; Retirement of Bonds; Accounting for Retirement of Bonds; Conversion of Bonds into Common Stock; Accounting for Conversion of Bonds into Common Stock; Other Long-Term Liabilities; Mortgages Payable; Installment Notes Payable; Payments of Accrued Interest Plus Equal Amounts of Principal; Payments of Accrued Interest plus Increasing Amounts of Principal; Long-Term Leases; Related Accounting Challenges for Long-

Term Leases; Capital Leases; Classifications with Long-Term Leases; Accounting for Long-Term Leases

v. Reasons for Long-Term Liabilities

http://www.umar.edu/~emgt322/FM_CH11/

An online presentation on long-term liabilities

vi. Non-current Assets & Capital,

<http://management.canberra.edu.au/lectures/accounting/sem981/unit4220/lecture4/index.htm>

An online presentation on non current assets and capital that covers: Types of Non-current Assets; Cost of a Non-current Asset; What items should be included in cost of machinery; Acquisitions recorded at other than cost; Depreciation; 3 Judgments of Depreciation; Depreciation Methods; Revaluation; Revaluation statistics; Owners' Equity; Dividends;

vii. Small Business Accounting Assistance Business Town,

<http://www.businesstown.com/accounting/basic.asp>

The site offers an overview of the general ledger, the language of accounting, components of the accounting system, basic terms and concepts, income statements, balance sheets, depreciation, amortization and inventory accounting.

e. Government Accounting

i. Financial Reporting in Government

<http://www.pwc.gmu.edu/course/govt490/index.html>

An online text exploring major issues in government accounting and financial reporting.

ii. Net Present Value Analysis

http://www.acq.osd.mil/dp/cpf/pgv1_0/pgv2/pgv2c9.html

A DoD reference guide for using net present value in contract pricing.

2. Corporate Resources

This group of web sites has a corporate focus. They offer information on where a company is now, or what it has done in the past. Many of the sites also contain estimates of how companies will do in the future. The sites can be divided into mostly free and mostly fee based.

a. Mostly free

i. Alert-IPO!

<http://www.alertipo.com/cgi-bin/ai.exe>

An IPO site, which groups the IPOs by issuer. The site also provides a brief description of the activities of each company, ticker, symbol, shares offered, price offered, and employees, state of incorporation, revenue, income, and underwriter.

ii. CNET.com - News – Investor

<http://investor.cnet.com/>

A good site for research: provides quotes, charts, news, financials (including the last few quarters all on one screen), and a list of competitors.

iii. CNN-Money

<http://money.cnn.com/>

The site offers quotes, news articles, earnings estimates and charts.

iv. Company Profiles -- United States

<http://profiles.wisi.com/profiles/UnitedStates.htm>

This site has information about over 20,000 major companies located around the world, including over 7,200 in the United States. Data provided include stock chart, brief profiles, and list of directors, phone, fax, fiscal year month, historical sales, earnings, PE ratio, historical dividend information and much more. Some of the information has a free limit for the day. When the number of user exceeds the limit the still can be obtained for a fee.

v. DailyStocks.com

<http://www.dailystocks.com/>

When a name or a ticker is typed the site provides all the links containing the name or the ticker in one page. It links directly to the page that concerns that particular company.

vi. Financial and Company News, Research, Quotes

<http://www.newsalert.com/>

Another corporate web site. It offers company profiles, Charts, Earnings forecasts, news, as well as some fundamental data (market capitalization, PE ratio, Dividend Yield, EPS, 52 week highs and lows). It uses the resources of other sites, like Hoover's and big charts.

vii. Forbes

[http://www.forbes.com/membership/signup.jhtml?comingFrom=magazine &gotoDescription=See%20The%20Story&gotoURL=%2Fforbes%2F1997%2F0113%2F5901092a.html&storyURL=/forbes/1997/0113/5901092a.html&storyURI=/cms/template/story/mag/story.jhtml?story=/forbes/1997/0113/5901092a.html& requestid=2305](http://www.forbes.com/membership/signup.jhtml?comingFrom=magazine&gotoDescription=See%20The%20Story&gotoURL=%2Fforbes%2F1997%2F0113%2F5901092a.html&storyURL=/forbes/1997/0113/5901092a.html&storyURI=/cms/template/story/mag/story.jhtml?story=/forbes/1997/0113/5901092a.html&requestid=2305)

The Forbes annual report on American Industry provides details about 1,280 companies in 20 different industries. Gives brief overviews of each industry, and for each company provides return on capital, return on equity, sales and EPS growth, sales, income, margin and debt/capital ratio. A long and annoying registration process is required in order to access the report. After the registration they sent spam.

viii. Fortune.com – Home

<http://www.fortune.com/>

The Fortune 500 lists the largest 500 corporations in the United States. You can view the big 500 as ranked by assets, sales, or profits. Information available includes profits, sales, profit growth, sales growth, etc. This page also has the Fortune 1000, and lets the users download the list in Excel format.

- ix. Free Annual Reports - The Public Register's Annual Report Service - PRARS

<http://www.prars.com/>

The users can order annual reports for many US companies from this site, and they'll be sent via mail for free. The site often displays an internal server error when a report is ordered.

- x. FT.com Global business news search and analysis from the Financial Times <http://news.ft.com/home/us/>

A site sponsored by Financial Times. It offers some corporate information as well as quotes and analyst estimates. They also have a good market monitoring section and comprehensive articles and analysis of industry sectors and companies.

- xi. Historical Stock Data

<http://biz.swcp.com/stocks/>

Offers comprehensive stock data for S&P 500 going back to 1997. You can view data online or download it for analysis. The downloaded files are very difficult to work with unless you buy a special program they offer (called trademan)

- xii. Hoover's Online - Home Page

<http://www.hoovers.com/>

"Capsules" for over 13,000 U.S. (and some international) firms are available for free. Data provided include sales, employees, CEO, CFO, address, telephone, and a brief description of what the businesses do. Additional information is available for a certain fee. There's also a brief write-up on each company.

- xiii. Investing Home - MSN Money

<http://moneycentral.msn.com/investor/home.asp>

This site offers quotes and graphs. After viewing a historical graph, one can hit "see table" and get a table with the daily prices and volumes. You can specify the range (going back to at least 1995) and the interval. However, there's no open button (making it difficult to do candlestick charts). When a graph is opened again it is not always the previous closed one. Some of the data can not be viewed on line and has to be downloaded.

xiv. INVEST tools Inc

<http://www.investtools.com/home.html>

This is a good page, but you have to register. Some of the contents are not free. There's a lot of useful data that are free, however. Some of it is linked directly to Market guide, but there are also things here you cannot find elsewhere

xv. Lycos Finance Stocks & News

<http://investing.lycos.com//>

This site has profiles, earnings estimates, charts, quotes and news: very similar to Yahoo's quote service.

xvi. Moby Data

<http://www.mobydata.com/>

The site offers historical index data, going back to the late 1980s. It also has the Dow, S&P 500, and many more. Only three are free per day.

xvii. Morningstar.com - Independent help for successful investing

<http://www.morningstar.com/>

The site offers a lot of investment information and tools. After a registration process the users can analyze stocks, funds and portfolios. The visitors can also create their own portfolios.

There is some corporate data as well – quotes, financials, charts, news, analyst reports. The site provides 1000 stock picks and recommendations by different analysts as well as the site's rating of funds.

xviii. MultexInvestor from Multex.com

<http://www.multexinvestor.com/af00946/home.asp>

Offers brokerage reports from a wide variety of places for a fee. The research reports as well as the "Disclosure Tear sheets", "Consensus estimates" and their own three page profiles are free.

xix. PR Newswire - Targeted News Distribution & Monitoring

<http://www.prnewswire.com/>

The site offers recent news releases from many (but certainly not all) public companies. The releases are also available on the Yahoo server, but this site

appears to keep longer archives, and also seems to be a few minutes faster posting the new releases than Yahoo is.

xx. Quicken.com

<http://www.quicken.com/>

A site for researching companies It provides snapshots, news, quotes, charts, earnings estimates, financial statements and a list of competitors. The site also offers earnings estimates from I/B/E/S.

xxi. SearchBug - The Most Useful Financial Tools

<http://www.searchbug.com/finance/>

The site offers Quotes, news and reports, advanced charts, historical charts, historical quotes, mutual funds, market activity monitoring, Initial public offerings information, rates monitoring, industry and companies analyses and research.

xxii. SEC Filings & Forms (EDGAR)

<http://www.sec.gov/edgar.shtml>

This site contains information that publicly traded companies in the United States are required by law to submit to the Securities and Exchange Commission (SEC). Until May 6, 1996, companies had the option of filing electronically, and some did not do this. A large quantity of useful information is provided in company filings, which can often be hundreds of pages in length. Useful filings include 10-Ks, which are filed annually and 10-Qs, which are filed quarterly. Note that the SEC's search engine is very unreliable and it takes a lot of time to find what you are looking for. For this reason, it is strongly recommended that you use one of the following sites, as they carry the same data, but allow you to find it reliably.

- 10 K Wizard

<http://www.10kwizard.com/>

Allows full text (And fast) searches of company filings. Requires registration

- Free Edgar

<http://www.freeedgar.com/>

The site has a reliable Edgar interface. It also has the added bonus of having full historical quarterly summary financial statements on one page, so you don't have to load every 10-Q. You can also search on SIC code or name, and the interface is very good.

- Edgar Scan

<http://edgarscan.pwcglobal.com/recruit/other.html>

The site can extract financial data from Edgar filings quickly and reliably. After a company name is typed the site provides links to their financial data, and all of it is hyperlinked. You can also download excel spreadsheets with a company's financial data: This site also has a java applet for graphing various financial figures.

xxiii. Silicon Investor

<http://www.siliconinvestor.com/index.gsp>

Good profiles of many tech stocks: mainly the best parts of the 10Ks. Also provided are the results (revenues, net income, profit margin, EPS) for the most recent quarters, P/E, Price/Sales, market cap. Stock charts (100 days, 100 weeks and 60 months) are also available. However, what is really interesting about this site is that there is a section where people discuss various tech stocks.

xxiv. Standard & Poor's Homepage

<http://www.standardpoor.com/>

The site offers a lot of information and tools for a fee. For free one can get a company profile, charts, news, quotes and some statistics.

They also provide a downloadable list of S&P 500 companies and their industry classification.

xxv. Standard & Poor's net advantage [http://80-www.netadvantage.
standardandpoors.com.libproxy.nps.navy.mil/](http://80-www.netadvantage.standardandpoors.com.libproxy.nps.navy.mil/)

This is a fee-based site that can be accessed for free through the proxy server of the Dudley Knox library. It searches in all of the S&P resources and sites (free and fee based) and offers a lot of useful information: Bonds analysis and comparison; mutual funds; industry surveys; industry and company outlooks; quotes; historical performance data; ratios; analysts recommendations and analysis and much more.

xxvi. StockSelector

<http://www.stockselector.com/>

This site offers some good things: a bar chart (with values) for the last five years' EPS, and projected for the next five years. It also provides the date of the next scheduled earnings release. Also has summary financial statements, and lots of financial ratios and an industry comparison.

xxvii. ViWes InvestInfo NASDAQ Short Interest

<http://www.viwes.com/Invest/shorts/query.cgi>

The site provides information about how many shares have been sold short for NASDAQ companies.

xxviii. Zacks equity research center

<http://my.zacks.com/index.php3?ALERT=LADA>

One of the best corporate portals. It offers several services:

- Company quotes, profiles, reports, comparisons with the industry, estimates, news, graphs etc.;
- Screening by different criteria specified by the user (for example stock price, company size etc.)
- Monitoring of USA and International markets;
- Analysts' following a stock, their current recommendations, and their track records for each of the last 6 years.
- Positive and negative market surprises;
- Fee based advises from market analysts and experts. (including free trial)

Some times the site is slow and may not load if the user is behind a firewall.

xxix. Yahoo Finance

<http://quote.yahoo.com/>

Quotes, charts, profiles from Market Guide, recent news articles, message boards to discuss stocks and Zack's earnings estimates are available for publicly traded

companies. The news archive here is one of the best free news archive anywhere (contains Reuters, Business Wire and PR Newswire), and this is also a reliable site for quotes. Companies are selected by typing in tickers (the site has a very good search engine for tickers). There are also links to some SEC filings. The web page also provides company profiles and Upgrade/Downgrade history. Yahoo does not appear to be totally current (perhaps they can't publish right away?).

xxx. The NASDAQ Stock Market

<http://www.nasdaq.com/>

Offers price information for NASDAQ stock; Quotes; free annual reports; market news; market activity monitoring (market indexes, sector overviews etc.); monitoring of the global markets; pre and after hours indicators; stock consultation (7 per day are free); streaming live quotes and market browser (fee based).

xxxi. Wall Street City - Investor's Super Site on the Web

<http://www.wallstreetcity.com/>

The site offers good graphs, from 1 day to 10 years. You can graph up to 10 stocks simultaneously. Also has some quotes. After registration, a lot of fundamental data and historical quotes are available.

xxxii. Big Charts

<http://bigcharts.marketwatch.com/>

This site offers all kinds of data about publicly traded companies, including summary quotes, ratios, charts and graphs. They also have the major market indexes. The site has a good symbol look up search engine (lists the company symbols in the different markets). The site provides a java applet that can draw different charts for a company from 1 day up to 10 years. You can add trend lines to the charts and make comparisons with the industry or any other company.

b. Mostly fee based

i. .xls Home Page <http://www.xls.com/>

This site, named after the default extension in Excel, contains many different databases that can be searched. As its name implies, the data usually has to be loaded into a spreadsheet. They offer descriptions of the databases, which include

profiles, ownership reports, IPOs, debt issues, and much more. The prices for the services are not included.

ii. Fidelity Investments <http://www300.fidelity.com/>

The site offers a lot of useful corporate and investment information. Most of it is fee based.

iii. IPO Data Systems – Profiles <http://www.ipodata.com/profiles.html>

Profiles of companies that did an IPO since 1994 (free for 2001; fee based for earlier listings.). Good detailed descriptions of the companies, with detailed information about the planned uses of proceeds. Underwriter information, issue price, etc. are also given. This is a good place to research a company with a recent IPO.

iv. Research Bank Web Home

<http://www.investext.com/NASApp/RBApp/jsp/content/TFSHome2.jsp>

The site offers one million research reports from over 500 investment firms. The information is not free.

v. Wall Street Research Net

<http://www.wsrn.com/index.html>

The site provides five year and 52 week high and lows, 60 month charts, EPS growth rates, liquidity value, market cap, and beta. They also offer summary financials for the last five years and the last five quarters as well as historical ratios, including profit margin, price/book, price/sales, P/E, etc. The site also offers comparisons to the industry, and earnings estimates. There are also some useful links.

3. Calculators and tools

a. Mortgage Calculator

<http://accesshome.net/tools/calculator.html>

Contains two Calculators:

- Amortization schedule calculator - The input variables are First payment year; mortgage amount; interest rate; Mortgage length; Payment frequency

- Loan payment calculator – calculates the monthly principle plus interest, the monthly tax, monthly insurance and total payment based on the length of loan in years, interest rate, loan amount, annual property tax, annual insurance

b. Calculators, Federal Reserve Bank of Chicago

<http://www.chicagofed.org/consumerinformation/consumerinformationoverview/calculators/calculatorlaunch.cfm>

Offers a compound interest calculator (yearly and daily compounding options) and a mortgage calculator

c. CFO.com – Tools

<http://www.cfo.com/tools/0,5374,13,00.html>

The site offers several calculators:

- Small Business Checkup Evaluation Tool

Where does your company stand? This tool assesses financial data using key ratios of liquidity, debt, profitability, and bankruptcy analysis.

- Business Valuation Calculator

The calculator uses a balance of three methods -- adjusted net assets, capitalization of earnings, and excess earnings -- to establish a value estimate.

- Lease vs. Buy Evaluation Tool

Evaluates the cash and investment implications of leasing equipment versus purchasing it. The analysis enables the user to see the breakdown of actual cash expenditures, and the cost-of-funds-adjusted flows by tax year.

- Stock Options Calculator

Computes the value of equity puts and calls using the Black-Scholes model. It can be used to determine the fair value of an option, how the option will change if market conditions change, the probability of making a profit, and the implied volatility of the option.

- Convertible Bond Calculator

Analyzes the valuation of a bond by looking at its market conversion price, market conversion premium, simple yield, yield to maturity, straight value, premium over straight value, and embedded convertible bond option value.

- **Futures Options Calculator**

Calculates the value of put and call options on futures using the Black-Sholes model.

- **Oanda Currency Converter**

A multilingual tool that calculates the up-to-date exchange rate between any 2 of 164 currencies. The rate can be calculated for the current day or for any day since January 1, 1990.

d. Depreciation Calculator

<http://www.fixedassetinfo.com/calculator.htm>

Calculates the depreciation for different types of assets. The calculator works in several steps. In step one the type of property and the date it was purchased are selected. In the second step the method is chosen. There are three options – straight line, Declining balance or MACRS formula. According to the method chosen the calculator produces a table.

e. Finance Tools

http://business.lycos.com/finance/fintools_h.asp

The site offers some free tools: Balance sheet template, Cash flow budget worksheet, Customer statement of account template, Daily cash sheet template, income statement template, Monthly bank reconciliation, Trial balance worksheet template, Sample collection letters and Present value tables.

There is also a good tax preparation section including Home Office deduction calculator, different tax forms IRS tax tables, Federal tax forms etc.

f. Financial Power Tools Mortgage Calculators, Loan Calculators, Interest Rate, Amortization, Credit Card Debt Consolidation

<http://www.financialpowertools.com/>

The site contains 17 calculators – amortization loan calculator, auto loan calculator, buyers cash calculator, Canadian loan calculator, Credit card debt calculator,

Discounted cash flow calculator, Future value spread calculator, Home mortgage calculator, Home Seller's proceeds calculator, Interest rate calculator, Loan comparison calculator, Loan spread Calculator, Pay down debt calculator, Refinancing calculator, Rent vs. buy calculator, Simple loan calculator.

g. Mortgage Calculator

<http://ray.met.fsu.edu/~bret/amortize.html>

Calculates amortization schedule based on principal, payment per year, annual interest rate, and number of regular payments, balloon payment, and payment amount.

4. Glossaries

a. Rupp's Insurance & Risk Management Glossary

<http://www.nils.com/rupps/>

A thorough glossary of financial accounting and other terms. The text search engine allows queries to be formed from arbitrary Boolean expressions containing the keywords AND + OR, and grouped with parentheses

b. ABCNEWS.com Business Glossary

<http://abcnews.go.com/sections/business/DailyNews/glossary0209.htm>

1

A relatively good glossary of accounting and financial terms. The glossary does not have a search engine. The terms and definitions are listed in alphabetical order.

c. InvestorWords.com - Investing Glossary

<http://www.investorwords.com/>

A thorough glossary of accounting and financial terms. It is regularly updated with new terms. The glossary is equipped with a search engine, with two options – search by key word or search by alphabetical order. It has over 6 000 definitions and also offers more than 20 000 links between related terms. The site is slow.

d. The Biz-ed glossary and diagram bank

<http://www.bized.ac.uk/glossary/index.htm>

The Biz/ed glossary and diagram bank has over 1000 business and economics definitions and nearly 200 of the most common diagrams for one to search or browse. The glossary and the diagrams are all inter-linked so that a search in the glossary will also give all related diagrams and glossary terms and vice versa. There is also an acronym finder, to help check what certain accounting, economics and business abbreviations stand for.

e. Investor Relations Glossary

<http://corporate.globalsources.com/IRS/FGLOSARY.HTM>

An online glossary of financial terms with emphasis on corporate finance. The glossary does not have a search engine. The terms and definitions are listed in alphabetical order.

5. Professional organizations and associations

a. AGA-Advancing Government Accountability

<http://www.agacgfm.org/>

The site of the Association of Government Accountants. The organization has been instrumental in developing accounting and auditing standards and in generating new concepts for the effective organization and administration of financial management functions, including the passage of the Inspector General Act of 1978 and the Chief Financial Officer's Act of 1990. AGA conducts independent research and analysis of all aspects of government financial management. These studies have led AGA to be recognized as a leading advocate for improving the quality and effectiveness of government fiscal administration.

The resources on this site are fee based, with the exception of some articles.

b. AICPA online

<http://www.aicpa.org/index.htm>

This is the site of the American Institute of Certified Public Accountants. The site offers: The comprehensive report of the AICPA Special Committee on Financial

Reporting, chaired by Edmund Jenkins (Also known as the Jenkins Report.); different research databases; information about accreditation of specialized practice areas such as ABV, CITP, and PFS; a clearinghouse of information for CPAs in Business/Industry; establishing and monitoring adherence to the Standards for Performing and Reporting on Peer Reviews; a wide array of programs and services for curriculum enhancement; an overview of the CPA profession and what it takes to become one; online articles and publications; news, resources, and links of federal legislative and regulatory developments; links to other sites.

c. Financial Accounting Standards Board

<http://accounting.rutgers.edu/raw/fasb/>

The mission of the Financial Accounting Standards Board is to establish and improve standards of financial accounting and reporting for the guidance and education of the public, including issuers, auditors, and users of financial information⁴

The web page of the FASB has several sections:

- Recent Additions
- Index of recently added or changed content on the site.
- Technical Projects
- Technical Projectst
- Emerging Issues
- Publications
- FASB Facts
- FASB Casebook
- News Center

Most of the useful data (the FASB publications for example) is not free.

d. Federal Accounting Standards Advisory Board

<http://www.fasab.gov/>

The Federal Accounting Standards Advisory Board promulgates accounting principles for federal government reporting entities. This website provides

⁴ <http://accounting.rutgers.edu/raw/fasb/>

access to all publications issued by FASAB including exposure drafts, the volume of original pronouncements ("Codification"), newsletters, minutes and meeting agendas.

e. Governmental accounting standards board

<http://accounting.rutgers.edu/raw/gasb/>

The site of the Governmental accounting standards board. The site offers information about: Statement 34 (including on line training sessions and articles and publications on Statement 34); GASB research projects; the use and reporting of performance measures for government.

The site also offers the option for ordering all GASB publications for a certain fee.

f. Internal Revenue Service

<http://www.irs.ustreas.gov/>

The Site of the Internal revenue service. It offers: tax statistics; IRS publications; advices to tax payers and much more.

g. National Society of Accountants

<http://www.nsacct.org/>

This is mainly a membership site offering: tax, accounting, IRS and NSA news; constant monitoring of IRS developments practices and procedures; all kinds of legislative information concerning accounting; magazines books and publications; tax and accounting tools

h. The Official Web Site of the American Accounting Association

<http://accounting.rutgers.edu/raw/aaa/>

The American Accounting Association promotes worldwide excellence in accounting education, research and practice. Founded in 1916 as the American Association of University Instructors in Accounting, its present name was adopted in 1936. The Association is a voluntary organization of persons interested in accounting education and research.

The site offers educational resources, publications and research projects. Some of the resources require membership.

i. U.S. Chief Financial Officers Council

<http://www.cfoc.gov/>

The U.S. Chief Financial Officers Council is an organization of the CFOs and Deputy CFOs of the largest Federal agencies, senior officials of the Office of Management and Budget and the Department of the Treasury who work collaboratively to improve financial management in the U.S. Government.

The site offers mainly different documents: CFO Act of 1990; CFOC Charter; 2000 Federal Financial Management Report (5 Year Plan); 2000 Financial Report of the United States Government; Charter of the Chief Financial Officers Council; NARA GPEA Guidance; Principles of Federal Appropriations Law; OMB budgets; OMB - Government wide Performance Plan; OMB's Strategic Plan and much more.

6. Miscellaneous

a. AccountingWEB - The everyday resource for accountants and accounting professionals

<http://www.accountingweb.com/>

The site requires registration. It offers: daily accounting news; hottest topics page to see what everyone else is reading; free weekly e-mail newswires; Tax zone; CPE resource page; news, information and products from vendors across the country; some data on the top ten industries; financial calculators.

b. CFO

<http://www.cfo.com/>

CFO.com is a comprehensive online resource center for senior finance executives. They claim that their mission is to help their readers do their jobs better.

CFO.com offers daily stories geared specifically for finance executives. Coverage includes original reporting on new accounting standards, recent capital-raising, risk management, and professional career development. The site also features proprietary benchmarking tools and calculators, plus a full set of related directories, special reports, and buyer's guides. In addition, CFO.com provides complete online editions of CFO Magazine, as well as selected coverage from CFO Europe and CFO Asia.

c. CPA net - the complete resource for the accounting profession

<http://www.cpalinks.com/>.

CPA net is a website resource to help accountants interact in an online community, find resourceful websites tailored to their needs, utilize the Internet to gain new business, improve the quality of client service and conduct efficient and effective research.

Currently, CPA net is primarily a resource directory of websites that are of interest to the accounting profession. CPA net includes over 800 links to various accounting related websites and is a valuable Internet information and navigation resource. In addition, they have some additional features like client industry-based discussion groups, search capabilities and an Amazon.com affiliate bookstore with over 900 accounting-related titles!

d. Fixed Asset Info - fixed asset information, information on accounting, gasb 34-35, fixed asset management, fixed asset software

<http://www.fixedassetinfo.com/>

The site contains:

- Articles concerning the management of fixed assets, including tax law changes
- Very good depreciation calculator. (Described in the calculator part).
- Accounting links – the site has several good links to accounting bodies and professional organizations as well as other accounting web sides.
- Tax center

e. Smart Pros accounting

<http://accounting.smartpros.com/>

Requires registration for most of the data.

The site has some useful articles in the areas of Accounting, A & A, Financial Planning, Corporate Finance, Tax and Technology

The site also offers for a fee a variety of financial and accounting courses.

7. Gateways

These are sites that contain links to other financial sites. Many of the sites researched in this thesis can be found as a hyperlink on one of these web pages. They may be useful for research of financial and accounting web sites on the Internet.

a. Accounting & Finance Links

<http://www.lib.cmich.edu/bibliographers/judyodell/AcctFin.htm>

The site offers links that are grouped in several categories: Associations; Dictionaries; Government; Companies; Multi-Topic Sites; Sources of Financial Information; Taxes

b. Accounting and Tax Web Sites

<http://www.business.uab.edu/FACULTY/Messina/websites.htm>

The site offers links mainly to corporate web sites as well to some tax sites

c. Accounting Links

<http://www.fixedassetinfo.com/accounting.htm>

The site offers links grouped in the following categories: Inventory; accounting publications; professional organizations; Accounting Websites; Business Glossary

d. Accounting Resources An Index of FMS Government Accounting

Resources <http://www.fms.treas.gov/resource.html>

The site offers an index of Government accounting resources available via the FMS Web Site and Selected outside Resources

e. Accounting Web Sites

<http://acct.tamu.edu/smith/acctwebs.htm>

This is a gateway for organizations and regulatory bodies in the field of accounting and auditing

f. Accounting Web Sites

<http://www.calstatela.edu/faculty/dwlee/web/>

The web site offers links to: Sources of Financial Accounting Information (Annual Reports, EDGAR Database); Stock Market Information; Accounting

Organizations (FASB, AICPA, SEC); Accounting Firms; Consulting Firms; Accounting Career; Accounting Journals and Publishers; Financial Databases; Tax Resources; Business News Web Sites

g. Accounting Web Sites

<http://ejw.i8.com/acctweb.htm>

The site has two main sections of links – accounting web sites (organizations, corporate data, on line publications and magazines) and tax information pages

h. ACCT Resource Web Sites

<http://www.missouri.edu/~accterw/accsites.htm>

The links on this site are grouped in several categories: Financial Statement and Investment Research; Stock Markets; Business and Accounting Periodicals; Reporting Developments and Accounting Pronouncements; Accounting Organizations; Accounting Firms and other companies on the Internet; Accounting Research Homepages.

i. Financial Accounting & Reporting

<http://www.taxsites.com/financial.html>

The site offers four groups of links: regulatory bodies; company information; accounting research and miscellaneous sites

Defining the scope and categorizing the financial accounting web site is the first step in the analysis process. The data is much diversified and of different quality. Therefore there is a need to assess the data so that it can be more useful for the potential users. To accomplish this task this thesis will use several criteria.

- Quality Criteria
 - Accuracy and Reliability
 - Accessibility and Cost
 - Currency
- Relevance to financial reporting courses (MN2150;MN3156;MN2155;MN4159;GB3050;GB4550)
 - Relevance to financial reporting courses objectives

- Relationship to financial reporting courses topics.

The criteria will be given weights and each site will get an overall rating.

The next chapter develops the criteria and explains how the overall rating will be calculated.

THIS PAGE INTENTIONALLY LEFT BLANK

III. CRITERIA FOR ASSESSMENT OF THE WEB SITES CONTAINING FINANCIAL AND ACCOUNTING INFORMATION

A. INTRODUCTION

The purpose of this chapter is to define criteria by which the web sites containing financial and accounting data can be assessed. It uses two types of criteria – general and institutional. The criteria are based on key characteristics that the web sites exhibit. In addition the chapter establishes a formula for calculating an overall rating of the web sites.

The criteria and the formula are used in the next chapter to evaluate and rank the sites.

B. CRITERIA FOR ASSESSMENT OF THE WEB SITES

The web sites containing financial and accounting data are very diverse. There are no standards or officially recognized formats. There are differences in design, reliability and accessibility. There are also differences in the data and the way it is accessed and updated.

Like any source of information Internet/World Wide Web sites must be evaluated for the quality of the information they contain. The fact that anybody and any organization can put information on the Web is a major problem. Sometimes there are inadvertent errors in the information put online. There are cases when misleading information is intentionally put on the Internet. Most of the time there is no content review process to assure the users of the quality of the information. Consequently, it becomes the responsibility of the Internet searchers to assess the quality of the information they find.

Therefore it is useful to establish key characteristics for evaluation of the diverse web sites.

This thesis is going to use the following criteria:

- Quality Criteria
 - Accuracy and Reliability
 - Accessibility and Cost
 - Currency

- Relevance to financial reporting courses
(MN2150;MN3156;MN2155;MN4159;GB3050;GB4550)
 - Relevance to financial reporting courses objectives
 - Relationship to financial reporting courses topics

1. **Quality**

a. Accuracy and reliability

This thesis defines accuracy and reliability of the web sites as a group of sub criteria. They include:

- Error-free information
- Objective, balanced presentation of information
- Bias-free viewpoints and images
- Correct use of grammar, spelling, and sentence structure
- The links to additional sites are relevant, authentic, and appropriate
- The authors or sponsors of the site can be identified
- The reputation of the authors or the sponsors
- Contact information for the authors or sponsors
- Expertise/reputation of host site
- How much advertisement does the web site offer

The research of web sites showed that they exhibit differences in some or all of the above criteria. Some of the web sites contained errors; while for others it was difficult to verify who were the authors or sponsors. In addition sometimes there was no contact information and some of the sites tried to advertise products or services.

Therefore accuracy and reliability appears to be a useful criterion for evaluation of the web sites.

b. Accessibility and Cost

Besides accuracy and reliability accessibility and cost are also important for potential users of financial information on the web. Accessibility and cost have several characteristics:

- Is the data available free of charge
- Does the site require registration

- Does the site become overloaded when too many users log on
- How fast the side is? Does it load within reasonable time?
- Intuitive icons, menus, and directional symbols that foster independent use
- Inter side links (links that take you to locations within the original site) that allow easy navigation throughout the site
- Standard multimedia formats
- Logical options for printing or downloading all or selected text and graphics
- Site follows good graphic design principles
- Screen displays uncluttered and concise
- Captions, labels, or legends for all visuals
- Legible text and print size appropriate for the intended audience
- Graphics and art functional, not merely decorative
- Information presented through text, motion, still images, and sound

The web sites researched in this thesis have some similar characteristics as far as accessibility is concerned. Many of them use standard web templates, design and graphics. Nevertheless there are a lot of differences. Some of the web sites are easier to navigate and are user friendly. Others are slow or less difficult to navigate. In addition there are web sites that require registration or offer their databases and data for a certain fee.

Therefore accessing the accessibility and cost of web sites is a useful criterion for the potential users.

c. Currency

This criterion covers the timeliness of data. It is defined by several sub criteria:

- When was the site originally published in the web
- Is the page dated
- Is it updated regularly (is there are a “what’s new page to indicate when the page was last updated and what (substantial) changes were

made at that time? Changing the spelling of one word shouldn't be considered an update!)

- How current are the links on the page
- Is the information on the page outdated
- Is there data that shows what are the future intentions of the web site publishers

Links that are not "broken," new material that is added to a site on a regular basis, and a revision date that is fairly recent indicate a living site that is nurtured and grows. This is not an indication of the accuracy or quality of the information of a Web site, but it shows that the publishers want the site to be usable, current, and a place for the users to return. URLs change all the time therefore an occasional broken link is very probable to occur; but many broken links indicate site neglect and possible problems with the content of the site too.

The currency or regularity of updating information is very important for financial and accounting information. The users require current financial and accounting information for several reasons:

- The timeliness of the data is required for different types of analysis
- There are regular changes in legislation that concerns finance and accounting
- There are also changes in the financial and accounting paradigms theory, practices and concepts

The overview of the web sites in this thesis indicates that some of them are more current than others. Therefore timelines appears to be an appropriate criterion for evaluation of the many and various financial and accounting web sites.

2. Relevance to financial reporting courses objectives and topics
(MN2150;MN3156;MN2155;MN4159;GB3050;GB4550)

This criterion evaluates the relevance of the web sites found to the financial reporting courses objectives and specific topics. The assessment sub criteria will include relevance to:

- Concepts, theory and practices of financial accounting;
- Three basic reports – the balance sheet, the income statement and the statement of cash flows
- Basic accounting processes and the accounting cycle
- The effect of different accounting policies on the balance sheet, the income statement and the statement of cash flows
- Balance sheet
 - Procedures for preparing the balance sheet
 - Balance sheet account titles
 - Analysis of the balance sheet
- Income statement
 - Procedures for preparing the income statement
 - Accounting methods for measuring performance
 - Measurement principles of accrual accounting
 - Overview of accounting procedures
- Statement of cash flows
 - Procedures for preparing the statement of cash flows
 - Analysis of the statement of cash flows
- Receivables and revenue recognition
 - Income recognition principles
 - Income recognition methods (at times of sales; at times different from sale)
 - Effects on the financial statements
- Inventories
 - Accounting for inventories
 - Methods for evaluating inventory

- Effect on the financial statements of transactions involving inventory
- Plant equipment and intangible assets
 - Acquisition of assets
 - Depreciation – fundamental concepts
 - Depreciation methods
 - Repairs and improvement and retirement of assets
 - Intangible assets and amortization
 - Effects on the statements of cash flows on transactions involving fixed and intangible assets
- Liabilities
 - Basic concepts of liabilities
 - Current liabilities
 - Long term liabilities
 - Off balance sheet financing
 - Leases
 - Income tax accounting and deferred taxes
 - Effect on the financial statements of transaction involving liabilities
- Marketable securities and investment
 - Types of investments
 - Active and passive investments in minority and majority
 - Preparing consolidated financial statements
- Shareholders equity
 - Disclosures of shareholders equity
 - Capital contributions
 - Treasury shares
 - Retained earnings
 - Disclosure of changes in shareholders equity
 - Effects on the statement of cash flows of transactions involving shareholders equity
- Sources of financial and accounting data and financial analysis
 - Sources of financial and accounting data

- Horizontal and trend analysis of financial statements
- Ratio analysis

C. ASSESSING THE FINANCIAL REPORTING WEB SITES

The criteria described above will be used to evaluate the web sites containing financial and accounting data. These criteria are qualitative and therefore the assessment of web sites is subject to judgment. Nevertheless this thesis argues that quantitative tools can be used to rank the sites. The sites will be evaluated along two dimensions: quality and relevance to financial reporting courses. Each site is going to be assessed on the basis of two scores:

- Quality rating
- Relevance rating

1. Quality rating

The following formula appears to be appropriate for calculating the overall quality rating of a web site.

$$OR = \sum_i^n w_i * c_i$$

OR = overall rating

W = the weight of a criterion

C = the score of a criterion

$$\sum w_i = 1$$

Each quality criterion will receive a score between 1 and 5. Each site must exhibit certain characteristics to be awarded a score.

Accuracy and reliability	
Score	Characteristics
5	<p>The site must:</p> <ul style="list-style-type: none"> • Present error free information • Be unbiased and objective • Not contain spelling mistakes or wrong grammar and sentence structure • Have links to other sites that are relevant to and support the site's objectives • Disclose who are its authors and sponsors and how they can be contacted • Have authors or sponsors with high reputation • Be hosted on a reliable and reputable host site

	<ul style="list-style-type: none"> • Not have advertisements or commercial banners and pop ups
4	<p>The site must:</p> <ul style="list-style-type: none"> • Present information with few errors • Be unbiased and objective • Contain a few spelling mistakes or wrong grammar and sentence structure • Have few links to other sites that are not relevant to and support the site's objectives • Disclose who are its authors and sponsors and how they can be contacted • Have authors or sponsors with high reputation • Be hosted on a reliable and reputable host site • Not have advertisements or commercial banners and pop ups
3	<p>The site must:</p> <ul style="list-style-type: none"> • Present information with some errors • Be unbiased and objective • Contain some spelling mistakes or wrong grammar and sentence structure • Have some links to other sites that are not relevant to and support the site's objectives • Disclose who are its authors and sponsors • Have no information how the authors can be contacted • Have authors or sponsors with good reputation • Be hosted on a relatively reliable and reputable host site • Have few advertisements or commercial banners and pop ups
2	<p>The site must:</p> <ul style="list-style-type: none"> • Present information with a lot of errors • Show some bias • Contain relatively many spelling mistakes or wrong grammar and sentence structure • Have relatively many links to other sites that are not relevant to and support the site's objectives • Do not disclose who are its authors and sponsors • Be hosted on a relatively unreliable host site • Have some advertisements or commercial banners and pop ups
1	<p>The site must:</p> <ul style="list-style-type: none"> • Present information that contains so many errors that it is virtually useless for the surfers • Show strong biases and little objectivity • Contain many spelling mistakes, wrong grammar and incorrect sentence structure • Have links to other sites that are not relevant to and do not support the site's objective • Have no information about its sponsors or authors or the information is false • Be hosted on an unreliable server with low reputation • Have a lot of advertisements, commercial banners and pop ups and try to sell some product or service

Accessibility and cost	
Score	Characteristics
5	<p>The site must:</p> <ul style="list-style-type: none"> • Provide free data • Require no registration • Not overload regardless of the number of users • Load very quickly • Have intuitive interface • Have intersite links that facilitate the navigation • Use multimedia formats that can be recognized by all browsers and does not require the download and installation of additional software • Allow download of all the information that the users think is useful and relevant to their needs • Have graphics that facilitate the apprehension of information • Display uncluttered and concise on the screen • Have captions, labels or legends for the visual elements • Exhibit text that is easy to read • Have graphics, visuals, sounds, videos and other multimedia elements that are functional and not decorative • Show perfect balance between the different means to present information (text, images; graphics; videos; sound etc.)
4	<p>The site must:</p> <ul style="list-style-type: none"> • Provide free data • Require no registration • Overload when there are too many users • Load quickly • Have mostly intuitive interface • Have intersite links that facilitate the navigation • Use multimedia formats that can be recognized by most browsers and does not require the download and installation of additional software • Allow download of most of the information that the users think is useful and relevant to their needs • Have graphics that facilitate the apprehension of information • Display uncluttered and concise on the screen • Have captions, labels or legends for most of the visual elements • Exhibit text that is easy to read • Have graphics, visuals, sounds, videos and other multimedia elements that are mostly functional and not decorative • Show good balance between the different means to present information (text, images; graphics; videos; sound etc.)
3	<p>The site must:</p> <ul style="list-style-type: none"> • Provide free and paid data • Require registration in order to access some parts of the site • Overload when there are many users

	<ul style="list-style-type: none"> • Load relatively quickly • Have relatively intuitive interface • Have intersite links that neither facilitate the navigation nor make it more difficult • Use multimedia formats that can be recognized by some browsers and require the download and installation of additional software in order to be recognized by others • Allow download of some of the information that the users think is useful and relevant to their needs • Have graphics that relatively facilitate the apprehension of information • Display mostly uncluttered and concise on the screen • Have captions, labels or legends for some of the visual elements • Exhibit text that is relatively easy to read • Have graphics, visuals, sounds, videos and other multimedia elements that are relatively functional and not decorative • Show some balance between the different means to present information (text, images; graphics; videos; sound etc.)
2	<p>The site must:</p> <ul style="list-style-type: none"> • Provide mostly paid data • Require registration in order to access most parts • Overload when the number of users is average • Load relatively slowly • Have interface that is mostly not intuitive • Have intersite links that rather embarrass navigation than facilitate it • Use multimedia formats that can be recognized by few browsers and require the download and installation of additional software in order to be recognized by the others • Have restrictions for download of most of the information • Have graphics that mostly do not facilitate the apprehension of information • Display mostly cluttered and not concise on the screen • Not have captions, labels or legends for most of the visual elements • Exhibit text that is relatively difficult to read • Have graphics, visuals, sounds, videos and other multimedia elements that are mostly not functional and decorative • Show poor balance between the different means to present information (text, images; graphics; videos; sound etc.)
1	<p>The site must:</p> <ul style="list-style-type: none"> • Provide paid data • Require registration to access the site • Overload even when the number of users is not big • Load very slowly • Have interface that is not user friendly and not intuitive • Have intersite links that make the navigation difficult and frustrating • Use multimedia formats that can not be recognized by most browsers and

	<p>require the download and installation of additional software</p> <ul style="list-style-type: none"> • Not allow download of any information • Have graphics that do not facilitate the apprehension of information • Display cluttered and not concise on the screen • Does not have captions, labels or legends for the visual elements • Exhibit text that is not easy to read • Have graphics, visuals, sounds, videos and other multimedia elements that are decorative and not functional • Show total misbalance between the different means to present information (text, images; graphics; videos; sound etc.)
Currency	
Score	Characteristics
5	<p>The site must:</p> <ul style="list-style-type: none"> • Be published after 1997 • Be updated regularly and show the date of the last update and what changes were made • Have no broken links • Provide information that is up to date • Present data that reveals the future intensions of the publishers
4	<p>The site must:</p> <ul style="list-style-type: none"> • Be published after 1997 • Be updated mostly regularly and show the date of the last update and what changes were made • Have few broken links • Provide information that is mostly up to date • Present data that reveals the future intensions of the publishers
3	<p>The site must:</p> <ul style="list-style-type: none"> • Be published before 1997 • Be updated relatively regularly and show the date of the last update and what changes were made • Have some broken links • Provide information that is relatively up to date • Not present data that reveals the future intensions of the publishers
2	<p>The site must:</p> <ul style="list-style-type: none"> • Be published before 1995 • Be rarely updated and not show the date of the last update and what changes were made • Have a lot of broken links • Provide information that is relatively outdated • Not present data that reveals the future intensions of the publishers
1	<p>The site must:</p> <ul style="list-style-type: none"> • Be published before 1993 • Not be updated • Have links that are mostly broken

	<ul style="list-style-type: none"> • Provide information that is completely outdated • Not present data that reveals the future intentions of the publishers
--	--

Table 2. Scores and characteristics of the quality criteria

The quality criteria are given the following weights:

Criteria	Reasons	Weight
Accessibility and Cost	<p>This criterion is given the highest weight for the following reasons:</p> <ul style="list-style-type: none"> • Cost is a factor that can turn a potential user away even though the site is of high quality and the information is relevant • Registration can often be frustrating and time consuming. Other things being equal the users will prefer a site without registration • Other things being equal the users prefer sites that are faster, user friendly and easier to navigate • The users also prefer sites with easy to read text and comprehensible contents 	0.5
Accuracy and Reliability	<p>Accuracy and reliability are also important, but they have less significance for educational purposes than the accessibility and cost criterion:</p> <ul style="list-style-type: none"> • Weaknesses associated with this criterion are less likely to frustrate users • The site may be of high quality even if it exhibits biased, not balanced and not error free information • It may not be clear who the publishers are. Nevertheless the data provided could be very useful • The advertisements (unless the site is biased and tries to sell something) do not influence the quality of the information on the site 	0.25
Currency	<p>As far as the potential users are concerned the currency of data has less weight than accessibility and cost. Currency could be used as an indicator whether the publishers of the site have serious intentions to support and develop it. The lack of broken links, the regular review and adding of new data are factors that influence the usefulness of the site to potential users. On the other hand the lack of currency does not mean that the data is of no quality. In many cases outdated information can be used for educational purposes in the field of financial reporting.</p>	0.25

Table 3. Weights of the quality evaluation criteria 3

A table format will be used to calculate the overall quality rating of a web site containing financial and accounting information.

criteria	score	weight	Rating (score*weight)
Accuracy and Reliability	1-5	0.5	-
Accessibility and Cost	1-5	0.25	-
Currency	1-5	0.25	-
OVERALL RATING			-

Table 4. Calculating the overall quality rating

2. Relevance rating

The second dimension for assessment of the web sites researched in this thesis is their relevance to financial reporting courses.

The calculation of this score does not require weights since the relevance to the objectives and to specific financial reporting course topics is equally important.

Each site will be assigned a score ranging between one and five. Where one is the lowest and 5 is the highest score.

The site must have certain characteristic in order to receive a score.

Score	Characteristics
5	<p>The site must have high relevance to any one, a group or all of the following:</p> <ul style="list-style-type: none"> • Balance sheet • Income statement • Statement of cash flows • Receivables and revenue recognition • Inventories • Plant equipment and intangible assets • Liabilities • Marketable securities and investment • Shareholders equity • Financial analysis
4	<p>The site must have relatively high relevance to any one, a group or all of the following:</p> <ul style="list-style-type: none"> • Balance sheet • Income statement • Statement of cash flows • Receivables and revenue recognition • Inventories

	<ul style="list-style-type: none"> • Plant equipment and intangible assets • Liabilities • Marketable securities and investment • Shareholders equity • Financial analysis
3	<p>The site must have medium relevance to any one, a group or all of the following:</p> <ul style="list-style-type: none"> • Balance sheet • Income statement • Statement of cash flows • Receivables and revenue recognition • Inventories • Plant equipment and intangible assets • Liabilities • Marketable securities and investment • Shareholders equity • Financial analysis
2	<p>The site must have low relevance to any one, a group or all of the following:</p> <ul style="list-style-type: none"> • Balance sheet • Income statement • Statement of cash flows • Receivables and revenue recognition • Inventories • Plant equipment and intangible assets • Liabilities • Marketable securities and investment • Shareholders equity • Financial analysis
1	<p>The site must have no relevance to any one, a group or all of the following:</p> <ul style="list-style-type: none"> • Balance sheet • Income statement • Statement of cash flows • Receivables and revenue recognition • Inventories • Plant equipment and intangible assets • Liabilities • Marketable securities and investment • Shareholders equity • Financial analysis

Table 5. Scores and characteristics of the relevance criteria

The methodology described above will be applied in the next chapter in order to evaluate different categories of web sites containing financial and accounting data.

IV. ANALYSIS AND RANKING OF THE WEB SITES CONTAINING FINANCIAL AND ACCOUNTING INFORMATION

A. INTRODUCTION

The purpose of this chapter is to evaluate the financial reporting sites found on the Web. The chapter will start with the assessment of the educational resources category. Then it will evaluate the remaining categories of financial reporting web sites.

The findings and ratings in this chapter are subjective and represent the view of the author of this thesis.

The assessment process is based on the criteria and methodology developed in the previous chapter.

The process of evaluation included several steps:

- Browsing of the main page of each web site;
- Browsing of all the sub pages in a web site;
- In the case the access to a web site was restricted, performing all the necessary procedures to access the site;
- Checking the main page and sub pages for accuracy and reliability;
- Checking the main page and sub pages for accessibility and cost;
- Checking the main page and sub pages for currency;
- Checking the web sites for relevance to the financial accounting and reporting courses
- Following links on the main page and the sub pages

The sites were sorted in descending order according to their overall quality rating.

The relevance rating was sorted in descending order for each group with equal overall quality ratings.

In many cases the sites that have high overall quality ratings have high relevance ratings as well. In some cases though there is a discrepancy between the two ratings.

There are sites with high quality ratings and low relevance ratings or vice versa. It's up to the potential users to make a decision concerning the tradeoffs between quality and relevance.

B. EVALUATION OF THE EDUCATIONAL RESOURCES FOUND ON THE WEB

1. General Accounting

SITES AND SUBCATEGORIES	Quality criteria				Relevance criteria
	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
Accounting tutorial, http://www.access.wvu.edu/class/acctutor/tableofc.htm	5	4	3	4	5
Biz/EDLearning materials – Accounting, http://www.bized.ac.uk/stafsup/options/accounting/	5	4	3	4	5
Overview of the accounting cycle - http://www.business.umt.edu/faculty/herron/courses/ACCT655_01/overview.htm	4	4	2	3.5	3
Skousen student study center http://www.swcollege.com/acct/skousen/int/student_introduction.html	4	3	3	3.25	4
Financial accounting text book, http://college.hmco.com/accounting/needs/fa/instr/ppt/view.htm	4	3	3	3.25	3
Financial accounting presentation, http://panoptic.csustan.edu/3110/	4	3	2	3	3
Forecasting Cash Flow Planning Cash Flow, Profit, Sales, Costs, Inventory, Ratios, Finance, Receivables, Payables, Cash, http://www.planware.org/cashflow.htm?source=goto	3	3	3	3	2
CCH Business Owner's Toolkit Small Business Tools, Resources and Advice, http://www.toolkit.cch.com/tools/tools.asp	4	3	2	3	2

Table 6. Quality and relevance ratings of the general accounting web sites

The sites in this category have relatively high accuracy and reliability scores and relatively lower accessibility and cost and currency scores. There are two sites that appear to be better than the other six – “**Biz/EDLearning materials**” – **Accounting** and

“Accounting tutorial”. They are both free and objective and unbiased and do not require registration. The navigation is easy and the sites are relatively current. The two sites also excel in the relevance criteria. All of the sites provide theory that has some relevance to financial accounting and reporting courses. In addition the two best sites offer problems, tests, on line tutorials and other tools that facilitate the implementation of theory into practice.

The **“Skousen student study center”** is fourth in terms of its quality rating and third in terms of its relevance rating. The difference is due to somewhat frustrating navigation and improper use of graphics.

2. Financial Statements

	Quality criteria				Relevance criteria
SITES AND SUBCATEGORIES	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
Business Basics - The Balance Sheet, http://www.sfu.ca/~mvolker/biz/balsheet.htm	4	4	4	4	4
Financial statements presentation http://www.mgt.buffalo.edu/courses/mgf/301/g/Chpt2/index.htm	4	4	3	3.75	3
The income statement http://www.mece.ualberta.ca/Courses/ENGG405/Notes/Chpt3.htm	4	4	3	3.75	3
The statement of cash flows, http://ac.boisestate.edu/dmenglish/ch11cashflowstmt/	4	4	3	3.75	3
Introducing the income statement, http://edis.ifas.ufl.edu/BODY_FE008	4	4	2	3.5	3
Introducing the Balance Sheet, http://edis.ifas.ufl.edu/BODY_FE009	4	4	2	3.5	3
Financial Statements Index, http://www.accountinginfo.com/study/fs/index.htm	4	3	3	3.25	3
The balance sheet, http://loadledger.com/support/HTML-Java/hm/thebalancesheet.htm	3	3	2	2.75	2

Table 7. Quality and relevance ratings of the financial statements web sites

The sites in this category exhibit little differences in terms of accuracy and reliability and accessibility and cost. They show significant differences in terms of currency. There is one site with high quality and high relevance rating. It offers free and unbiased information. The design is user friendly, the navigation is easy and the site is current. The site is also better in terms of relevance. All of the sites provide theory that has some relevance to financial accounting and reporting courses. In addition “**Business Basics – The balance sheet**” offers some tools that facilitate the implementation of theory into practice.

3. Analysis of financial statements and other data

SITES AND SUBCATEGORIES	Quality criteria				Relevance criteria
	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
AEDI Financial Analysis Tools , http://web.extension.uiuc.edu/iidea/fast_to_ols.htm	4	3	4	3.5	3
Analyzing company reports http://www.ameritrade.com/educationv2/fhtml/learning/balsheetanalysis.fhtml	4	3	3	3.25	4
University of Arizona Students of Finance http://www.studyfinance.com/	4	3	3	3.25	2
Ratio Analysis-Financial Ratios-Industry Analysis http://ventureline.com/mbatools.htm	3	3	3	3	3

Table 8. Quality and relevance ratings of the analysis of financial statements and other data

This is the category that shows the least congruence between overall quality ratings and relevance ratings. It is hard to distinguish a site or a group of sites that clearly stand out compared to the others. For example all of the sites have the same accessibility and cost rating. There are more significant differences when the relevance ratings are considered. The site with the highest relevance is “**Analyzing company reports**”. It covers the different types of financial analysis and elaborates on the analysis of the income statement and the balance sheet. It also tries to tie all the ratios together.

4. Accounting policies, processes and issues

SITES AND SUBCATEGORIES	Quality criteria				Relevance criteria
	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
Reasons for Long-Term Liabilities, http://www.umar.edu/~emgt322/FM_CH11/	4	4	3	3.75	4
Small Business Accounting Assistance Business Town, http://www.businessstown.com/accounting/basic.asp	4	4	3	3.75	3
Current liabilities, http://inst.santafe.cc.fl.us/~scrosson/POA/PPT/c12htm/CHAP12/index.htm	4	4	2	3.5	4
Long term liabilities, http://inst.santafe.cc.fl.us/~scrosson/POA/PPT/c16htm/CHAP16/index.htm	4	4	2	3.5	4
Current Liabilities and the Time Value of Money, http://college.hmco.com/accounting/needs/fa/instr/ppt/ch09/	4	3	3	3.25	4
Non-current Assets & Capital, http://management.canberra.edu.au/lectures/accounting/sem981/unit4220/lecture4/index.htm	4	4	1	3.25	4
Accounting for assets, http://ac.ceu.edu/rvogel/busn2010/CH%20%207/animated/BUSN%202010%20-%20Chap%207/tsld001.htm	4	3	2	3	3

Table 9. Quality and relevance ratings of the accounting policies processes and issues web sites

All of the sites in this category have the same accuracy and reliability rating of four. They also exhibit similar accessibility and cost ratings with the exception of two sites. There are more significant differences with respect to currency. Most of the sites show high relevance ratings. Therefore the majority of the web sites are of relatively high quality and relevance.

5. Government accounting

	Quality criteria				Relevance criteria
SITES AND SUBCATEGORIES	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
Financial Reporting in Government, http://www.pwc.gmu.edu/course/govt490/index.html	4	3	3	3.25	4
Net Present Value Analysis, http://www.acq.osd.mil/dp/cpf/pgv1_0/pgv2/pgv2c9.html	4	2	4	3	2

Table 10. Quality and relevance ratings of the government accounting web sites

There are only two sides in this category. They have similar quality ratings and significantly different relevance ratings. The first site is a comprehensive information resource on government accounting. It covers theory and concepts as well as practices. The site also offers on line exercises and other study aids

C. EVALUATION OF GENERAL INFORMATION, NEWS, FINANCIAL STATEMENTS, EARNINGS ESTIMATES AND ANALYST REPORTS ETC

1. Mostly Free

	Quality criteria				Relevance criteria
SITES AND SUBCATEGORIES	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
Standard & Poor's net advantage http://80-www.netadvantage.standardandpoors.com.libproxy.nps.navy.mil/	5	4	4	4.25	4
Quicken.com http://www.quicken.com/	4	4	4	4	3
SearchBug - The Most Useful Financial Tools http://www.searchbug.com/finance/	4	4	4	4	3
Edgar Scan http://edgarscan.pwcglobal.com/recruit/other.html	4	4	4	4	3
Yahoo Finance http://quote.yahoo.com/	5	4	3	4	3

The Nasdaq Stock Market http://www.nasdaq.com/	4	4	4	4	3
BigCharts - Charting a World of Investment Information http://bigcharts.marketwatch.com/	4	4	4	4	3
Stock Selector http://www.stockselector.com/	4	4	3	3.75	4
Zack's equity research center, portfolio tracking and investment advice http://my.zacks.com/index.php3?ALERT=LADA	4	3	5	3.75	4
CNET.com - News - Investor http://investor.cnet.com/	3	4	4	3.75	3
CNN-Money http://money.cnn.com/	3	4	4	3.75	3
Company Profiles -- United States http://profiles.wisi.com/profiles/UnitedStates.htm	4	3	4	3.5	3
Hoover's Online - Home Page http://www.hoovers.com/	4	3	4	3.5	3
Lycos Finance Stocks & News http://investing.lycos.com/	4	3	4	3.5	3
10 K Wizard http://www.10kwizard.com	4	3	4	3.5	3
WallStreetCity - Investor's Super Site on the Web http://www.wallstreetcity.com/	4	3	4	3.5	3
Morningstar.com - Independent help for successful investing http://www.morningstar.com/	4	3	4	3.5	2
FT.com Global business news search and analysis from the Financial Times http://news.ft.com/home/us/	4	3	4	3.5	2
DailyStocks.com http://www.dailystocks.com/	3	3	4	3.25	3
Financial and Company News, Research, Quotes http://www.newsalert.com/	4	3	3	3.25	3
Investing Home - MSN Money http://moneycentral.msn.com/investor/home.asp	4	3	3	3.25	3
Moby Data	3	3	4	3.25	3

http://www.mobydata.com/					
Standard & Poor's Homepage http://www.standardpoor.com/	4	3	3	3.25	3
ViWes InvestInfo NASDAQ Short Interest http://www.viwes.com/Invest/shorts/quer y.cgi	4	3	3	3.25	2
Fortune.com - Home http://www.fortune.com/	3	3	4	3.25	2
Historical Stock Data http://biz.swcp.com/stocks/	3	3	4	3.25	2
Silicon Investor http://www.siliconinvestor.com/index.gsp	3	3	4	3.25	2
Free Edgar http://www.freedgar.com/	4	2	4	3	3
Alert-IPO! http://www.alertipo.com/cgi-bin/ai.exe	3	3	3	3	2
Forbes http://www.forbes.com/membership/signu p.jhtml?comingFrom =magazine &goto Description=See%20The%20Story&goto URL=%2Fforbes%2F1997%2F0113%2F 5901092a.html&storyURL=/forbes/1997/ 0113/5901092a.html&storyURI=/cms/tem plate/story/mag/story.jhtml?story=/forbes/ 1997/0113/5901092a.html&_requestid=2 305	4	2	4	3	2
Free Annual Reports - The Public Register's Annual Report Service – PRARS http://www.prars.com/	3	3	3	3	2
INVEST tools Inc http://www.investools.com/home.html	4	2	4	3	2
MultexInvestor from Multex.com http://www.multexinvestor.com/af00946/ home.asp	4	2	4	3	2
PR Newswire - Targeted News Distribution & Monitoring http://www.prnewswire.com/	4	2	4	3	1
SEC Filings & Forms (EDGAR) http://www.sec.gov/edgar.shtml	3	2	3	2.5	2

Table 11. Quality and relevance ratings of the mostly free corporate web sites

This category contains the largest number of financial accounting and reporting web sites. The accuracy and reliability and currency ratings of all of the sites are relatively good and range between three and five. The web sites have relatively lower accessibility and cost ratings - the highest being four and the lowest two. The diversification is greater in terms of relevance. The scores vary between the lowest possible of one and four. **“Standard & Poor’s net advantage”** is better than the others in terms of quality and relevance. It is actually a paid site that can be accessed for free via the Dudley Knox Library proxy server.

There are two other sites -**“Zack’s equity research center”** and **“Stock Selector”**-that stand out. Their overall quality rating is only 0.25 points lower than the sites above them in the ranking, but they excel significantly when relevance is taken into consideration.

2. Mostly fee based

SITES AND SUBCATEGORIES	Quality criteria				Relevance criteria
	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
Fidelity Investments http://www300.fidelity.com/	4	2	4	3	NA
Wall Street Research Net http://www.wsrn.com/index.html	4	2	4	3	NA
Research Bank Web Home http://www.investext.com/NASApp/RBApp/jsp/content/TFSHome2.jsp	4	2	4	3	NA
IPO Data Systems - Profiles http://www.ipodata.com/profiles.html	4	2	3	2.75	NA
.xls Home Page http://www.xls.com/	3	2	3	2.5	NA

Table 12. Quality and relevance ratings of the mostly fee based corporate web sites

The access to most of the features of the sites in this category is fee based. For this reason the sites could not be evaluated for relevance. All of the sites have relatively good accuracy and reliability and currency ratings. Their low overall quality ratings are due to the low accessibility and cost ratings. If cost were not a criterion for evaluation the sites would have much higher quality ratings.

D. EVALUATION OF CALCULATORS AND TOOLS

SITES AND SUBCATEGORIES	Quality criteria				Relevance criteria
	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
Finance Tools http://business.lycos.com/finance/fintools_h.asp	5	4	4	4.25	4
Depreciation Calculator http://www.fixedassetinfo.com/calculator.htm	4	4	4	4	4
CFO.com - Tools http://www.cfo.com/tools/0,5374,13,00.html	4	4	3	3.75	4
Mortgage Calculator http://accesshome.net/tools/calculator.html	3	4	3	3.5	2
Financial Power Tools Mortgage Calculators, Loan Calculators, Interest Rate, Amortization, Credit Card Debt Consolidation http://www.financialpowertools.com/	3	3	4	3.25	3
Calculators, Federal Reserve Bank of Chicago http://www.chicagofed.org/consumerinformation/consumerinformationoverview/calculators/calculatorlaunch.cfm	4	3	3	3.25	2
Mortgage Calculator http://ray.met.fsu.edu/~bret/amortize.html	3	3	3	3	3

Table 13. Quality and relevance ratings of the calculators and tools web sites

The accuracy and reliability ratings of the sites in this category are relatively good and range between three and five. The sites exhibit fewer differences in terms of accessibility and cost and currency ratings – the difference between the highest and the lowest rating is one point. The diversification is greater when relevance is considered. The scores vary between two and four.

There are three sites that stand out: “**Finance Tools**”, “**Depreciation Calculator**” and “**CFO.com – Tools**”. They all have equal relevance ratings and relatively high quality ratings.

E. EVALUATION OF GLOSSARIES

	Quality criteria				Relevance criteria
SITES AND SUBCATEGORIES	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
The Biz-ed glossary and diagram bank http://www.bized.ac.uk/glossary/index.htm	4	4	4	4	3
InvestorWords.com - Investing Glossary http://www.investorwords.com/	4	3	5	3.75	4
Investor Relations Glossary http://corporate.globalsources.com/IRS/FGLOSSARY.HTM	4	3	4	3.5	2
Rupp's Insurance & Risk Management Glossary http://www.nils.com/rupps/	4	3	3	3.25	3
ABCNEWS.com Business Glossary http://abcnews.go.com/sections/business/DailyNews/glossary0209.html	4	3	3	3.25	3

Table 14. Quality and relevance ratings of the glossaries web sites

The sites in this category show the same accuracy and reliability ratings. They also have the average accessibility and cost rating of three, with the exception of one site. There are more currency differences with ratings ranging from three to five points. Most of the sites have average or low relevance ratings.

There is one site -” **InvestorWords.com - Investing Glossary**” that stands out. Its overall quality rating is only 0.25 points lower than the “**The Biz-ed glossary and diagram bank**”, but it excels significantly when relevance is taken into consideration.

F. EVALUATION OF PROFESSIONAL ORGANIZATIONS

	Quality criteria				Relevance criteria
SITES AND SUBCATEGORIES	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
Federal Accounting Standards Advisory Board http://www.fasab.gov/	4	4	4	4	4

Internal Revenue Service http://www.irs.ustreas.gov/	4	3	4	3.5	3
U.S. Chief Financial Officers Council http://www.cfoc.gov/	4	3	4	3.5	3
Governmental accounting standards board http://accounting.rutgers.edu/raw/gasb/	4	2	5	3.25	3
AICPA online http://www.aicpa.org/index.htm	3	3	4	3.25	2
Financial Accounting Standards Board http://accounting.rutgers.edu/raw/fasb/	4	2	4	3	4
The Official Web Site of the American Accounting Association http://accounting.rutgers.edu/raw/aaa/	4	2	4	3	4
AGA-Advancing Government Accountability http://www.agacgfm.org/	4	2	4	3	3
National Society of Accountants http://www.nsacct.org/	3	2	3	2.5	2

Table 15. Quality and relevance ratings of the professional organizations web sites

The sites in this category have relatively high accuracy and reliability and currency ratings and relatively low accessibility and cost ratings. The reason for this is that most of them require registration or fees and the navigation is difficult. Also there are many discrepancies between the overall quality ratings and the relevance ratings. This is the only category in which there are sites with a relevance rating of four points and an overall quality rating of three points. These are the sites of the **Financial Accounting Standards Board** and of the **American Accounting Association**.

The site of the **Federal Accounting Standards Advisory Board** stands out. It has the highest overall quality and relevance ratings.

G. EVALUATION OF MISCELLANEOUS

SITES AND SUBCATEGORIES	Quality criteria				Relevance criteria
	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
CPA net - the complete resource for the accounting profession http://www.cpalinks.com/	4	4	3	3.75	4

AccountingWEB - The everyday resource for accountants and accounting professionals http://www.accountingweb.com/	3	3	4	3.25	3
CFO http://www.cfo.com/	3	3	4	3.25	3
Fixed Asset Info - fixed asset information, information on accounting, gasb 34-35, fixed asset management, fixed asset software http://www.fixedassetinfo.com/	3	3	4	3.25	3
SmartPros Accounting http://accounting.smartpros.com/	3	2	4	2.75	2

Table 16. Quality and relevance ratings of the miscellaneous web sites

There are only five sites in this group. All of them with the exception of one have very good currency ratings. On the other hand most of the sites have relatively low accessibility and cost and, accuracy and reliability and relevance ratings. **“CPA net - the complete resource for the accounting profession”** is the site that excels in quality and relevance compared to the others.

H. EVALUATION OF GATEWAYS

	Quality criteria				Relevance criteria
SITES AND SUBCATEGORIES	Accuracy and Reliability	Accessibility and Cost	Currency	Overall rating	Relevance
Accounting Web Sites http://www.calstatela.edu/faculty/dwlee/web/	4	4	3	3.75	NA
ACCT Resource Web Sites http://www.missouri.edu/~accterw/accsites.htm	4	4	3	3.75	NA
Accounting & Finance Links http://www.lib.cmich.edu/bibliographers/judyodell/AcctFin.htm	3	3	4	3.25	NA
Accounting Links http://www.fixedassetinfo.com/accounting.htm	4	3	3	3.25	NA
Accounting Resources An Index of FMS Government Accounting Resources http://www.fms.treas.gov/resource.html	3	3	4	3.25	NA

Accounting and Tax Web Sites http://www.business.uab.edu/FACULTY/Messina/websites.htm	3	3	3	3	NA
Accounting Web Sites http://acct.tamu.edu/smith/acctwebs.htm	3	3	3	3	NA
Accounting Web Sites http://ejw.i8.com/acctweb.htm	3	3	3	3	NA
Financial Accounting & Reporting http://www.taxsites.com/financial.html	3	2	4	2.75	NA

Table 17. Quality and relevance ratings of the gateways

The sites in this category are web pages with links to other web pages. For this reason it is not feasible to evaluate them in terms of relevance to financial accounting and reporting courses. Therefore the sites received only quality ratings.

The sites evaluated in this chapter are included in the web page. The process of its building is described in the next chapter.

V. THE WEB SITE BUILDING PROCESS

A. INTRODUCTION

The aim of this chapter is to describe the process of web page building. The chapter will start with explaining what factors were considered for the creation of the web page. Then it will elaborate on the web page building software used in this thesis (Microsoft Front Page). It will cover:

- Layout
- Design
- Adding text to the Web Page
- Creating tables
- Inserting images
- Creating links
- Changing the background

B. FACTORS CONSIDERED IN THE PROCESS OF THE BUILDING OF THE WEB PAGE

A homepage is the top of a set of Web pages. It is where most people start exploring one's Web site, and it is the URL of that homepage that will be given to people who wish to explore the Web site.

The homepage generally contains an overview of the content available from that starting point, much like a table of contents. The links in the homepage are like bookmarks, marking other pages within the Web.

In the process of creation of the web page the following factors were taken into consideration:

- The goals of this thesis
- The type and content of information to be put on the Web
- The categories of financial and accounting web sites founded on the Web
- The use of a general structure for pages and topics by 'storyboarding' the homepage
- The ease with which the users will get from one page to another.
- The use of limited layers.

C. LAYOUT

Layout of a web page often determines whether a user will come back to the site. The following factors were considered appropriate for the layout of the web site:

- The menu choices should be clear enough so the user does not have to hunt and peck his/her way through the choices.
- Navigation should be apparent and consistent. (i.e. know where to click to go somewhere else, use same buttons for navigation throughout, design the page so users do not need to return to the root level to get to another area within your page)

D. DESIGN

Several simple rules were followed in the process of designing the web site:

- Create a main folder on your computer. It can later be moved to the appropriate place on the server hosting the web page.
- Create the main page within the folder.
- Create other pages linked to the main page.
- Create a folder named images (where all the images used in the web page are kept).
- Decide on some document/folder naming conventions or standards. The author of this thesis used all lowercase letters and no spaces. Spaces and capital letters do not always work on different computers and servers.
- Color can ruin some web sites. Color may be used but not overused.
- Background images make the site attractive, but often make the text hard to read. Any background image should compliment the text and graphics.
- The web page should be regularly checked in an Internet browser.

E. ADDING TEXT TO THE WEB PAGE

Using text in FrontPage is similar to using text in any word processing software. However there are several differences.

1. Indented paragraphs cannot be created

2. The program allows the web site builders to select from a series of fonts, however, they may not always display correctly on another computer that does not have that font.
3. Wrapping text around graphics requires effort and a lot of formatting.

F. ADDING TABLES TO THE WEB PAGE

Tables are most commonly used to arrange text and graphics on the screen. HTML does not allow having columns. But by inserting the text into a two column table it will appear as if columns are used. The use of tables also facilitates the user's perception of the web site.

G. INSERTING IMAGES

The author of this thesis used graphics from a variety of 'free' graphic sites on the Internet. The graphics were saved into the images folders of the main folders and the subfolders. The author of this thesis used a limited number of images. Too many images may slow the loading of the web site and make it look unattractive to the users.

H. CREATING LINKS

The creation of links facilitates the navigation in the web site. The author of this thesis used two types of links:

1. Links to other files within the web page.
2. Links to other pages on the web.

I. CHANGING THE BACKGROUND

The proper use of background is important because it facilitates the perception of the site by the users. The author of this thesis used two types of background.

1. Background color
2. Background Image

THIS PAGE INTENTIONALLY LEFT BLANK

VI. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

The purpose of this chapter is to provide a summary of the research and analysis conducted in this thesis. The purpose of this thesis was to research the financial reporting resources available on the Internet. The objective was to identify, categorize and evaluate the web sites related to financial accounting, reporting and analysis and to build a web page that contains links to the most useful of the sites that have been researched.

B. METHODOLOGY

The methodology used in thesis took into consideration the fact that the data researched was to be found on the Internet (the World Wide Web).

The first step was to search the Internet for financial and accounting web sites. The main search tool used in this thesis was the software program Copernic 2001 Pro. The outputs from Copernic 2001 Pro were verified by executing searches with the four best search engines according to the PC World magazine – Fast; Google; Lycos and Yahoo. The same key words and phrases were used in all the searches. There was an 80% overlap between Copernic and these four search engines. The second step was to determine the scope of the data that was available on the Web and to categorize it. Defining the scope and categorizing the financial accounting web site was a necessary step in the analysis process, but it is not enough. The data was much diversified and of different quality. Therefore there was a need to assess the data so that it could be more useful for the potential users. To accomplish this task this thesis used several criteria.

- Quality Criteria
 - Accuracy and Reliability
 - Accessibility and Cost
 - Currency
- Relevance to financial reporting courses
(MN2150;MN3156;MN2155;MN4159;GB3050;GB4550)
 - Relevance to financial reporting courses objectives
 - Relationship to financial reporting courses topics.

The criteria were given weights and each site received overall quality rating and relevance rating.

The last step was to build a web page with the financial accounting and reporting sites that were found on the Internet.

The methodology used in this thesis provided significant amount of information to verify the conclusions in this chapter.

C. SCOPE AND CATEGORIZATION

Two of the main research questions of this thesis were to determine the nature and scope of the financial accounting information available on the Internet and to identify the categories of web sites and web pages regarding financial accounting.

In order to answer these questions more than 200 web sites were explored. Whenever the sites contained links, they were followed. The publishers of the sites were very diverse. They included government bodies, non profit organizations, educational institutions, professional organizations, private firms and even individuals. The thesis found a variety of accounting related resources, including templates, calculators, on line tutorials and exercises, documents elaborating on theories and practices, downloadable documents, presentations and spreadsheets and data suitable for financial analysis. The diversity of the financial and accounting information found on the Internet brought up the issue of categorizing the web sites. Several categorization alternatives were considered:

- Group the sites by the documents in the accounting process
- Group the sites by key financial and accounting processes
- Group the sites by financial and accounting topics
- Group the sites by some general common criteria

The first three alternatives were judged to be unsuitable for the following reasons:

- The information was very versatile
- Many sites would have remained uncategorized
- One and the same site would have been used many times in the different categories.

Therefore the sites were categorized on the basis of some general criteria that could be used to group the web sites. The researched sites were categorized in 7 groups:

- Educational resources – web sites that offer theory as well as on line presentations and tutorials.
- Corporate resources – Web sites that offer corporate information, including company reports and other accounting information
- Calculators and Tools – Web sites that calculate different things like depreciation and amortization, interest rates, buy versus lease, cash flows and many other. Some of the sides provide templates and sample documents.
- Professional organizations and associations – these are the web sites of various government, professional and private organizations that are connected to financial accounting
- Glossaries of accounting terms
- Miscellaneous – Web sites that have financial accounting relevance but do not fit in the other categories
- Gateways – Web pages that consist of links to financial web sites

D. EVALUATION

Several of the subsidiary research questions in this thesis were to define the relevance to financial accounting and reporting instruction of the data found on the Web, the accuracy and reliability of web sites discovered on the Internet, the accessibility and cost and currency of the data. The process of evaluation of the web sites answered these questions. The sites were evaluated using the criteria described in the methodology section.

It can be concluded that these criteria are qualitative and therefore the assessment of web sites is subject to judgment. Nevertheless this thesis showed that quantitative approach can be used to rank the sites. The sites were evaluated along two dimensions: quality and relevance to financial reporting courses. Each site was assessed on the basis of two scores:

- Quality rating
- Relevance rating

The process of evaluation included several steps:

- Browsing of the main page of each web site;

- Browsing of all the sub pages in a web site;
- In the case the access to a web site was restricted, performing all the necessary procedures to access the site;
- Checking the main page and sub pages for accuracy and reliability;
- Checking the main page and sub pages for accessibility and cost;
- Checking the main page and sub pages for currency;
- Checking the web sites for relevance to the financial accounting and reporting courses
- Following links on the main page and the sub pages

The sites were sorted in descending order according to their overall quality rating. The relevance rating was sorted in descending order for each group with equal overall quality ratings. In many cases the sites that have high overall quality ratings have high relevance ratings as well. In some cases though there is a discrepancy between the two ratings. A conclusion that can be drawn from the evaluation process is that there are sites with high quality ratings and low relevance ratings or vice versa. It's up to the potential users to make a decision concerning the tradeoffs between quality and relevance.

E. WEB PAGE

The final research question in this thesis was whether the web sites that were found on the Internet can be included in a web page. Several factors were considered in the process of the building of the web page

- The goals of this thesis
- The type and content of information to be put on the Web
- The categories of financial and accounting web sites founded on the Web
- The use of a general structure for pages and topics by 'storyboarding' the homepage
- The ease with which the users will get from one page to another?
- The use of limited layers

The software used to construct the page was Microsoft FrontPage. The process itself included several steps:

- Layout

- Design
- Adding text to the Web Page
- Creating tables
- Inserting images
- Creating links
- Changing the background

F. CONCLUSIONS

In the recent years the Internet has evolved rapidly. One result of this evolution was the fast increase in the financial accounting and reporting information available on the WWW. The web sites that were found on the Internet differ in terms of relevance to financial accounting and reporting courses requirements. They also differ in terms of quality defined as accuracy and reliability, accessibility and cost and currency.

Like any source of information Internet/World Wide Web sites must be evaluated for the quality of the information they contain. The fact that anybody and any organization can put information on the Web is a major problem. Sometimes there are inadvertent errors in the information put online. There are cases when misleading information is intentionally put on the Internet. Most of the time there is no content review process to assure the users of the quality of the information. Consequently, it becomes the responsibility of the Internet searchers to assess the quality of the information they find.

The Internet is a rapidly changing environment. The web sites included in the web page were working at the time of the conducting of the research in this thesis. It may be expected that with time some of them will become outdated or may even cease to exist. Therefore in order to be of real use to the potential users the web site should be regularly maintained and updated.

G. RECOMMENDATIONS FOR FUTURE RESEARCH

Part of the methodology used in this thesis was searching web sites and web pages using Copernic 2001 Pro and verifying the results with some of the most popular search

engines. There may be alternative searching methodologies. This thesis explored only the World Wide Web. There are also news groups, FTP sites and other sources of information on the Internet. There are also many other search programs and search engines.

This thesis focused on the free financial accounting and reporting resources. Other researchers may broaden the scope and include managerial accounting and corporate finance sources as well. A lot of additional data may be discovered by researching the resources that are paid.

The findings in this thesis and the sites on the web page represent the web at a specific moment in time. There will be changes in the contents of the existing web sites and probably new sites will appear. Therefore it will be useful to conduct similar researches at given periods of time.

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
8725 John J. Kingman Rd., STE 0944
Ft. Belvoir, Virginia VA 22060-6218
2. Dudley Knox Library
Naval Postgraduate School
411 Dyer Road
Monterey, California 93943-5000
3. Professor O. Douglas Moses
Naval Postgraduate School
Monterey, California 93943-5103
4. Lecturer Tony Kendal
Naval Postgraduate School
Monterey, California 93943
5. Senior Lecturer John Mutty
Naval Postgraduate School
Monterey, California 93943-5103
6. Professor Joseph San Miguel
Naval Postgraduate School
Monterey, California 93943-5103
7. Don Summers
Naval Postgraduate School
Monterey, California 93943-5103